



10	20	30	40	50	60		
*	*	*	*	*	*		
ATG TCC TAT	CGC CCC	TTC AGA GAT	GTA CGG GGA CCC	CCT ATG CAC	CGA ACC CAA TAC	GTT CAT	
M S Y A P	F R D V R	G P P M H	R H R T Q Y V	H			
70	80	90	100	110	120		
*	*	*	*	*	*		
TCC CCG TAT	GAC CGT	CCC GGT	TGG AAC	CCC CGG TTC	TGC ATC ATC	TCT GGG AAC	CAG CTG CTC
AGG GGC ATA CTG	GCA GGG CCA ACC	TTG GGG GCC	AAG ACG	ACG TAG	AGA CCC TTG	GTC GAC GAG	
S P Y D R P G	W N P R F	I C I S G N Q	G L L				
130	140	150	160	170	180		
*	*	*	*	*	*		
ATG CTG GAT	GAG GAT	GAG ATA	CAC CCC	CTT CTG ATC	CGC GAC CGG	AGG AGC GAG	TCC AGC CGA
TAC GAC CTA CTC	CTA CTC TAT	GTG GGG GAA	GAC TAG	GCG CTG GCC	TCC TCG TCG	CTC AGG TCG GCT	
M L D E D I H	P L L I R	R D R R S	E S S S R				
190	200	210	220	230	240	250	
*	*	*	*	*	*	*	
AAC AAA CTG CTG	AGA CGC ACC	GTC TCT GTG	CCA GTG GAG	GGG CGG CCC	CAC GGC GAG	CAT GAA	
TTG TTT GAC GAC	TCT GCG TGG	CAG AGA CAC GGT	CAC CTC CCC	GCC GGG GTG	CCG CTC GTA	CTT	
N K L L R R T	V S V P V E	G R P H G E H	E H E				
260	270	280	290	300	310		
*	*	*	*	*	*		
TAC CAC TTG GGT	CGC TCG AGG	AGG AAG AGT	GTC CCC GGG	GGG AAA CAG	TAC AGC ATG GAA	GCC	
ATG GTG AAC CCA	GCG AGC TCC	TCC TTC TCA	CAG GGG CCC	CCC TTT GTC	ATG TCG TAC	CTT CGG	
Y H L G R S R R	K S V P G G	Q K Q Y S M E A					
320	330	340	350	360	370		
*	*	*	*	*	*		
GCC CCC GCT GCG	CCC TTC CGG	CCC TCG CAA	GGC TTC CTG	AGC CGG AGG	CTA AAA AGC	TCC ATC	
CGG GGG CGA CGC	GGG AAG GCC	GGG AGC GTT	CCG AAG GAC	TCG GCC TCC	GAT TTT TCG	AGG TAG	
A P A A P F R	P S Q G F L	S R S R R L K	S S R R R S S	S I			
380	390	400	410	420	430	440	
*	*	*	*	*	*	*	
AAA CGT ACA AAG	TCA CAA CCC	AAA CTT GAC	CGG ACC AGC	AGC AGC TTT	CGA CAG ATC	CTG CCT CGC	
TTT GCA TGT TTC	AGT GTT GGG	TTT GAA CTG	GCC TGG TCG	TCG AAA GCT	GTC TAG GAC	GGA GCG	
K R T K S Q P K	L D R T S S F	L D R T S S F	R Q I L P R				
450	460	470	480	490	500		
*	*	*	*	*	*		
TTC CGA AGT GCT	GAC CAT GAC	CGG GCC CGG	CTG ATG CAG	AGC TTC AAG	GAG TCT CAC	TCC CAT	
AAG GCT TCA CGA	CTG GTA CTG	GCC CGG GCC	GAC TAC GTC	TCG AAG TTC	CTC CTC AGA	GTG AGG GTC	
F R S A D H D	R A R L M Q S	F K E S H S	H				
510	520	530	540	550	560		
*	*	*	*	*	*		
GAG TCC CTG CTG	AGT CCC AGC	AGT GCT GCT	GAG GGC	CTG GAG CTC	AAC CTG GAT	GAA GAC TCC	
CTC AGG GAC GAC	TCA GGG TCG	TCA CGA CTC	CGG GAC	CTC GAG TTG	GAC CTA CTT	CTG AGG	
E S L L S P S	S A A E A L E	L N L D E D	S				
570	580	590	600	610	620	630	
*	*	*	*	*	*	*	
ATT ATC AAG CCA	GTA CAC AGC	TCC ATC CTG	GGC CAG GAG	TTC TGC TTT	GAG GTC	ACA ACA TCG	
TAA TAG TTC GGT	CAT GTG TCG	AGG TAG GAC	CCG GTC	CTC AAG ACG	AAA CTC	CAT TGT TGT	AGC
I I K P V H S	S S I L G Q	E F C F E V T	T T S				
640	650	660	670	680	690		
*	*	*	*	*	*		
TCT GGG ACA AAA	TGT TTT GCC	TGT CGG	TCT GCA	GCC GAA AGG	GAC AAA TGG	ATT GAG AAT CTA	
AGA CCC TGT TTT	ACA AAA CGG	ACA GCC	AGA CGT	CGG CTT TCC	CTG TTT ACC	TAA CTC TCA	GAT
S G T K C F A	C R S A A E R	D K W I E N L					

FIGURE 1A

700	710	720	730	740	750	
*	*	*	*	*	*	
CAG AGG GCT GTG AAA CCC AAC AAG GAC AAC AGC CGC CGG GTA GAT AAC GTG CTG AAA CTA TGG						
GTC TCC CGA CAC TTT GGG TTG TTC CTG TTG TCG GCG GCC CAT CTA TTG CAC GAC TTT GAT ACC						
Q R A V K P N K D N S R R V D N V L K L W						
780	790	800	810	820	830	
*	*	*	*	*	*	
ATC ATA GAA GCT CGA GAG CTG CCC AAG AAG CGA TAT TAC TGC GAG TTA TGC CTG GAC GAC						
TAG TAT CTT CGA GCT CTC GAC GGG GGG TTC TTC GCT ATA ATG ACG CTC AAT ACG GAC CTG CTG						
I I E A R E L P P K K R Y Y C E L C L D D						
820	830	840	850	860	870	880
*	*	*	*	*	*	*
ATG CTC TAT GCA CGG ACC ACT TCC AAG CCC CGC TCA GCC TCA GGA GAC ACT GTC TTT TGG GGC						
TAC GAG ATA CGT GCC TGG TGA AGG TTC GGG GCG AGT CGG AGT CCT CTG TGA CAG AAA ACC CCG						
M L Y A R T S K P R S A S G D T V F W G						
890	900	910	920	930	940	
*	*	*	*	*	*	
GAG CAC TTC GAG TTT AAC AAC CTG CCT GCT GTC CGG GCG CTG CGG CTG CAT CTG TAC CGT GAC						
CTC GTG AAG CTC AAA TTG TTG GAC GGA CGA CAG GCC CGC GAC GCC GAC GTA GAC ATG GCA CTG						
E H F E F N N L P A V R A L R L H L Y R D						
950	960	970	980	990	1000	
*	*	*	*	*	*	
TCG GAC AAA AAG CGG AAG GAC AAG GCA GGC TAC GTT GGC CTG GTG ACT GTT CCA GTG GCC						
AGC CTG TTT TTC GCC TTC CTG TTC CGT CCG ATG CAA CCG GAC CAC TGA CAA GGT CAC CGG						
S D K K R K D K A G Y V G L V T V P V A						
1010	1020	1030	1040	1050	1060	1070
*	*	*	*	*	*	*
ACC CTG GCT GGG CGC CAC TTC ACA GAG CAG TGG TAC CCC GTG ACC CTG CCA ACA GGA AGT GGG						
TGG GAC CGA CCC GCG GTG AAG TGT CTC GTC ACC ATG GGG CAC TGG GAC GGT TGT CCT TCA CCC						
T L A G R H F T E Q W Y P V T L P T G S G						
1080	1090	1100	1110	1120	1130	
*	*	*	*	*	*	
GGC TCT GGG GGT ATG GGC TCG GGG GGA GGA GGG GGG TCA GGG GGC GGC TCA GGG GGC AAA GGG						
CCG AGA CCC CCA TAC CCG AGC CCC CCT CCT CCC CCC AGT CCC CCG CCG AGT CCC CCG TTT CCC						
G S G G M G S G G G S G G G S G G G K G						
1140	1150	1160	1170	1180	1190	
*	*	*	*	*	*	
AAA GGA GGC TGT CCT GCT GTG CGG CTG AAG GCC CGT TAC CAG ACA ATG AGT ATC CTG CCC ATG						
TTT CCT CCG ACA GGA CGA CAC GCC GAC TTC CGG GCA ATG GTC TGT TAC TCA TAG GAC GGG TAC						
K G G C P A V R L K A R Y Q T M S I L P M						
1200	1210	1220	1230	1240	1250	1260
*	*	*	*	*	*	*
GAG CTA TAT AAG GAG TTT GCA GAA TAT GTG ACC AAC CAC TAC CGC ATG CTG TGT GCC GTG CTG						
CTC GAT ATA TTC CTC AAA CGT CTT ATA CAC TGG TTG GTG ATG GCG TAC GAC ACA CGG CAC GAC						
E L Y K E F A E Y V T N H Y R M L C A V L						
1270	1280	1290	1300	1310	1320	
*	*	*	*	*	*	
GAG CCC GCC CTC AAT GTC AAG GGC AAG GAG GAG GTC GCT AGT GCA CTG GTT CAC ATC CTG CAA						
CTC GGG CGG GAG TTA CAG TTC CCG TTC CTC CTC CAG CGA TCA CGT GAC CAA GTG TAG GAC GTT						
E P A L N V K G K E E V A S A L V H I L Q						
1330	1340	1350	1360	1370	1380	
*	*	*	*	*	*	
AGC ACA GGC AAG GCC AAG GAC TTC CTT TCA GAC ATG GCC ATG TCA GAG GTA GAC CGG TTC ATG						
TCG TGT CCG TTC CGG TTC CTG AAG GAA AGT CTG TAC CGG TAC AGT CTC CAT CTG GCC AAG TAC						
S T G K A K D F L S D M A M S E V D R F M						

FIGURE 1B



1390	1400	1410	1420	1430	1440	
*	*	*	*	*	*	
GAG CGG GAA CAC CTC ATA TTC CGC GAG AAC ACG CTC GCC ACT AAA GCC ATA GAA GAG TAT ATG						
CTC GCC CTT GTG GAG TAT AAG GCG CTC TTG TGC GAG CGG TGA TTT CGG TAT CTT CTC ATA TAC						
E R E H L I F R E N T L A T K A I E E Y M						
1450	1460	1470	1480	1490	1500	1510
*	*	*	*	*	*	*
AGA CTG ATT GGC CAG AAA TAC CTC AAG GAT GCC ATT GGG GAG TTC ATC CGG GCT CTG TAT GAA						
TCT GAC TAA CCG GTC TTT ATG GAG TTC CTA CGG TAA CCC CTC AAG TAG GCC CGA GAC ATA CTT						
R L I G Q K Y L K D A I G E F I R A L Y E						
1520	1530	1540	1550	1560	1570	
*	*	*	*	*	*	
TCT GAG GAG AAC TGT GAA GTA GAC CCC ATC AAG TGC ACA GCG TCC AGT CTG GCA GAG CAC CAG						
AGA CTC CTC TTG ACA CTT CAT CTG GGG TAG TTC ACG TGT CGC AGG TCA GAC CGT CTC GTG GTC						
S E E N C E V D P I K C T A S S L A E H Q						
1580	1590	1600	1610	1620	1630	
*	*	*	*	*	*	
GCC AAC CTG CGG ATG TGC TGT GAG TTG GCC CTG TGC AAG GTG GTC AAC TCC CAT TGC GTG TTC						
CGG TTG GAC GCC TAC ACG ACA CTC AAC CGG GAC ACG TTC CAC CAG TTG AGG GTA ACG CAC AAG						
A N L R M C C E L A L C K V V N S H C V F						
1640	1650	1660	1670	1680	1690	1700
*	*	*	*	*	*	*
CCG AGG GAG CTG AAG GAG GTG TTT GCA TCA TGG CGG CTG CGC TGT GCA GAG CGG GGC CGG GAG						
GGC TCC CTC GAC TTC CTC CAC AAA CGT AGT ACC GCC GAC GCG ACA CGT CTC GCC CCG GCC CTC						
P R E L K E V F A S W R L R C A E R G R E						
1710	1720	1730	1740	1750	1760	
*	*	*	*	*	*	
GAC ATT GCT GAC AGG CTG ATC AGC GCC TCG CTC TTC CTG CGC TTC CTC TGC CCG GCC ATC ATG						
CTG TAA CGA CTG TCC GAC TAG TCG CGG AGC GAG AAG GAC GCG AAG GAG ACG GGC CGG TAG TAC						
D I A D R L I S A S L F L R F L C P A I M						
1770	1780	1790	1800	1810	1820	
*	*	*	*	*	*	
TCG CCC AGT CTG TTT GGA CTG ATG CAG GAG TAC CCA GAT GAG CAG ACC TCA CGA ACC CTC ACC						
AGC GGG TCA GAC AAA CCT GAC TAC GTC CTC ATG GGT CTA CTC GTC TGG AGT GCT TGG GAG TGG						
S P S L F G L M Q E Y P D E Q T S R T L T						
1830	1840	1850	1860	1870	1880	1890
*	*	*	*	*	*	*
CTC ATC GCC AAG GTT ATC CAG AAC CTG GCC AAC TTT TCC AAG TTT ACC TCA AAG GAG GAC TTC						
GAG TAG CGG TTC CAA TAG GTC TTG GAC CGG TTG AAA AGG TTC AAA TGG AGT TTC CTC CTG AAG						
L I A K V I Q N L A N F S K F T S K E D F						
1900	1910	1920	1930	1940	1950	
*	*	*	*	*	*	
CTG GGC TTC ATG AAC GAG TTT CTG GAG CTG GAG TGG GGT TCT ATG CAG CAA TTC TTG TAT GAG						
GAC CCG AAG TAC TTG CTC AAA GAC CTC GAC CTC ACC CCA AGA TAC GTC GTT AAG AAC ATA CTC						
L G F M N E F L E W G S M Q Q F L Y E						
1960	1970	1980	1990	2000	2010	
*	*	*	*	*	*	
ATA TCC AAC CTG GAC ACA CTG ACC AAC AGC AGC AGT TTT GAG GGC TAC ATA GAC TTG GGC CGC						
TAT AGG TTG GAC CTG TGT GAC TGG TCG TCG TCA AAA CTC CCG ATG TAT CTG AAC CCG GCG						
I S N L D T L T N S S S F E G Y I D L G R						
2020	2030	2040	2050	2060	2070	
*	*	*	*	*	*	
GAG CTC TCC ACA CTT CAC GCC CTG CTC TGG GAG GTG CTG CCC CAG CTC AGC AAG GAA GCC CTC						
CTC CCG AAG GAA CGA CTC GAC CCC GTC GTG GAG GGT CTC GTC CCG CAC TTC ACA CCT CTC GAG						
E L S T L H A L L W E V L P Q L S K E A L						

FIGURE 1C



2080	2090	2100	2110	2120	2130	2140
*	*	*	*	*	*	*
CTG AAG CTG GGC CCG CTG CCC CGG CTC CTC AGC GAC ATC AGC ACA GCC CTG AGG AAC CCT AAC						
GAC TTC GAC CCG GGC GAC GGG GCC GAG TCG CTG TAG TCG TGT CGG GAC TCC TTG GGA TTG						
L K L G P L P R L L S D I S T A L R N P N						
2150	2160	2170	2180	2190	2200	
*	*	*	*	*	*	
ATC CAA AGG CAG CCG AGC CGC CAG AGC GAG CGC GCT CGG TCT CAG CCC ATG GTG CTG CGC GGG						
TAG GTT TCC GTC GGC TCG GCG GTC CTC GCG CGA GCC AGA GTC GGG TAC CAC GAC GCG CCC						
I Q R Q P S R Q S E R A R S Q P M V L R G						
2210	2220	2230	2240	2250	2260	
*	*	*	*	*	*	
CCG TCA GCC GAG ATG CAG GGC TAC ATG ATG CGG GAC CTC AAC AGC TCC ATC GAC CTT CAG TCC						
GGC AGT CGG CTC TAC GTC CCG ATG TAC TAC GCC CTG GAG TTG TCG AGG TAG CTG GAA GTC AGG						
P S A E M Q G Y M M R D L N S S I D L Q S						
2270	2280	2290	2300	2310	2320	2330
*	*	*	*	*	*	*
TTC ATG GCT CGA GGC CTC AAC AGC TCT ATG GAC ATG GCT CGC CTC CCC TCC CCA ACC AAG GAG						
AAG TAC CGA GCT CCG GAG TTG TCG AGA TAC CTG TAC CGA GCG GAG GGG AGG GGT TGG TTC CTC						
F M A R G L N S S M D M A R L P S P T K E						
2340	2350	2360	2370	2380	2390	
*	*	*	*	*	*	
AAA CCC CCG CCG CCC CCT CCC GGT GGG GGT AAA GAC CTG TTC TAT GTG AGC CGG CCA CCA CTG						
TTT GGG GGC GGC GGG GGA GGG CCA CCC CCA TTT CTG GAC AAG ATA CAC TCG GCC GGT GGT GAC						
K P P P P G G K D L F Y V S R P P L						
2400	2410	2420	2430	2440	2450	
*	*	*	*	*	*	
GCC CGG TCC TCC CCA GCA TAC TGC ACG AGC AGC TCG GAC ATC ACA GAG CCG GAG CAG AAG ATG						
CGG GCC AGG AGG GGT CGT ATG ACG TGC TCG TCG AGC CTG TAG TGT CTC GGC CTC GTC TTC TAC						
A R S S P A Y C T S S S D I T E P E Q K M						
2460	2470	2480	2490	2500	2510	2520
*	*	*	*	*	*	*
CTG AGT GTC AAC AAG AGT GTG TCC ATG CTG GAC CTG CAG GGC GAC GGG CCT GGG GGC CGC CTT						
GAC TCA CAG TTG TTC TCA CAC AGG TAC GAC CTG GAC GTC CCG CTG CCC GGA CCC CCG GCG GAA						
L S V N K S V S M L D L Q G D G P G G R L						
2530	2540	2550	12560	2570	2580	
*	*	*	*	*	*	
AAC AGC AGT AGT GTT TCC AAC CTG GCA GCT GTT GGG GAC CTG TTG CAC TCA AGC CAG GCT TCA						
TTG TCG TCA TCA CAA AGG TTG GAC CGT CGA CAA CCC CTG GAC AAC GTG AGT TCG GTC CGA AGT						
N S S S V S N L A A V G D L L H S S Q A S						
2590	2600	2610	2620	2630	2640	
*	*	*	*	*	*	
CTG ACA GCA GCC TTG GGG TTG CGG CCT GCA CCT GCC GGG CGC CTC TCC CAA GGG AGT GGC TCT						
GAC TGT CGT CGG AAC CCC AAC GCC GGA CGT GGA CGG CCC GCG GAG AGG GTT CCC TCA CCG AGA						
L T A A L G L R P A P A G R L S Q G S G S						
2650	2660	2670	2680	2690	2700	
*	*	*	*	*	*	
TCC ATC ACA GCA GCC GGC ATG CGC CTC AGC CAG ATG GGT GTC ACT ACG GAT GGT GTC CCC GCC						
AGG TAG TGT CGT CGG CCG TAC GCG GAG TCG GTC TAC CCA CAG TGA TGC CTA CCA CAG GGG CGG						
S I T A A G M R L S Q M G V T T D G V P A						
2710	2720	2730	2740	2750	2760	2770
*	*	*	*	*	*	*
CAG CAA CTG CGC ATC CCT CTT TCC TTC CAG AAC CCT CTC TTC CAT ATG GCT GCC GAT GGA CCA						
GTC GTT GAC GCG TAG GGA GAA AGG AAG GTC TTG GGA GAG AAG GTA TAC CGA CGG CTA CCT GGT						
Q Q L R I P L S F Q N P L F H M A A D G P						

FIGURE 1D



2780	2790	2800	2810	2820	2830	
*	*	*	*	*	*	
GGG CCC CCA GCA GGC CAT GGA GGG AGC AGT GGC CAT GGT CCA CCT TCC TCC CAT CAC CAC CAC	CCC GGG GGT CGT CCG CCT CCC TCG TCA CCG GTA CCA GGT GGA AGG AGG GTA GTG GTG GTG	G P P A G H G G S S G H G P P S S H H H H H				
2840	2850	2860	2870	2880	2890	
*	*	*	*	*	*	
CAC CAC CAT CAC CAT CAC CGA GGG GGA GAA CCC CCA GGG GAC ACT TTT GCC CCG TTC CAT GGC	GTG GTG GTA GTG GTA GTG GCT CCC CCT CTT GGG GGT CCC CTG TGA AAA CGG GGC AAG GTA CCG	H H H H H R G G E P P G D T F A P F H G				
2900	2910	2920	2930	2940	2950	2960
*	*	*	*	*	*	*
TAT AGC AAG AGC GAG GAC CTC TCT ACA GGG GTC CCT AAG CCC CCT GCG GCC TCC ATC CTT CAC	ATA TCG TTC TCG CTC CTG GAG AGA TGT CCC CAG GGA TTC GGG GGA CGC CGG AGG TAG GAA GTG	Y S K S E D L S T G V P K P P A A S I L H				
2970	2980	2990	3000	3010	3020	
*	*	*	*	*	*	
AGC CAC AGC TAC AGT GAT GAG TTT GGA CCC TCT GGT ACT GAT TTT ACC CGT CGG CAG CTC TCA	TCG GTG TCG ATG TCA CTA CTC AAA CCT GGG AGA CCA TGA CTA AAA TGG GCA GCC GTC GAG AGT	S H S Y S D E F G P S G T D F T R R Q L S				
3030	3040	3050	3060	3070	3080	
*	*	*	*	*	*	
CTT CAG GAC AAC CTA CAG CAC ATG CTC TCC CCG CCC CAG ATC ACC ATC GGT CCC CAG AGG CCA	GAA GTC CTG TTG GAT GTC GTG TAC GAG AGG GGC GGG GTC TAG TGG TAG CCA GGG GTC TCC GGT	L Q D N L Q H M L S P P Q I T I G P Q R P				
3090	3100	3110	3120	3130	3140	3150
*	*	*	*	*	*	*
GCT CCC TCA GGG CCA GGA GGG GGC AGT GGT GGG GGC AGT GGT GGG GGC GGT GGG GGC CAG CCA	CGA GGG AGT CCC GGT CCT CCC CCG TCA CCA CCC CCG TCA CCA CCC CCG CCA CCC CCG GTC GGT	A P S G P G G S G G S G G G G G Q P				
3160	3170	3180	3190	3200	3210	
*	*	*	*	*	*	
CCT CCC TTG CAG AGG GGC AAA TCT CAG CAG TTG ACA GTG AGT GCT GCC CAG AAA CCC CGG CCG	GGA GGG AAC GTC TCC CCG TTT AGA GTC GTC AAC TGT CAC TCA CGA CGG GTC TTT GGG GCC GGC	P P L Q R G K S Q Q L T V S A A Q K P R P				
3220	3230	3240	3250	3260	3270	
*	*	*	*	*	*	
TCC AGC GGG AAC CTA TTG CAG TCC CCG GAA CCA AGT TAT GGT CCT GCC CGT CCA CGG CAA CAG	AGG TCG CCC TTG GAT AAC GTC AGG GGC CTT GGT TCA ATA CCA GGA CGG GCA GGT GCC GTT GTC	S S G N L L Q S P E P S Y G P A R P R Q Q				
3280	3290	3300	3310	3320	3330	
*	*	*	*	*	*	
AGC CTC AGC AAA GAG GGC AGC ATT GGG GGC AGC GGG GGC AGC GGT GGC GGA GGG GGT GGG GGG	TCG GAG TCG TTT CTC CCG TCG TAA CCC CCG TCG CCC CCG TCG CCA CCG CCT CCC CCA CCC CCC CCC	S L S K E G S I G G S G G S G G G G G G G				
3340	3350	3360	3370	3380	3390	3400
*	*	*	*	*	*	*
CTC AAG CCC TCC ATC ACC AAG CAG CAT TCC CAG ACT CCA TCC ACG CTG AAC CCC ACG ATG CCG	GAG TTC GGG AGG TAG TGG TTC GTC GTA AGG GTC TGA GGT AGG TGC GAC TTG GGG TGC TAC GGC	L K P S I T K Q H S Q T P S T L N P T M P				
3410	3420	3430	3440	3450	3460	
*	*	*	*	*	*	
GCC TCG GAG CGG ACT GTA GCC TGG GTG TCC AAT ATG CCT CAC CTG TCC GCT GAC ATC GAG AGT	CGG AGC CTC GCC TGA CAT CGG ACC CAC AGG TTA TAC GGA GTG GAC AGG CGA CTG TAG CTC TCA	A S E R T V A W V S N M P H L S A D I E S				

FIGURE 1E



3470	3480	3490	3500	3510	3520	
*	*	*	*	*	*	
GCA CAC ATT GAG CGG GAA GAG TAC AAG CTG AAG GAG TAC TCG AAG TCC ATG GAC GAG AGC CGA						
CGT GTG TAA CTC GCC CTT CTC ATG TTC GAC TTC CTC ATG AGC TTC AGG TAC CTG CTC TCG GCT						
A H I E R E E Y K L K E Y S K S M D E S R						
3530	3540	3550	3560	3570	3580	3590
*	*	*	*	*	*	*
CTG GAC AGG GTG AAG GAG TAC GAG GAG GAG ATC CAC TCA CTG AAG GAA AGG CTA CAC ATG TCC						
GGA CAT GTG TAG CCT TTC CTT CAG TGA GTG GAT CTC CTC CTC CTC GTA CTC CTT CAC CCT GTC CAG						
L D R V K E Y E E I H S L K E R L H M S						
3600	3610	3620	3630	3640	3650	
*	*	*	*	*	*	
AAC CGG AAG CTG GAA GAG TAC GAG CGG AGG CTG CTG TCC CAG GAA GAG CAG ACC AGC AAG ATC						
TTG GCC TTC GAC CTT CTC ATG CTC GCC TCC GAC GAC AGG GTC CTT CTC GTC TGG TCG TTC TAG						
N R K L E E Y E R R L L S Q E E Q T S K I						
3660	3670	3680	3690	3700	3710	
*	*	*	*	*	*	
CTG ATG CAG TAC CAA GCC CGC CTG GAG CAG AGC GAG AAG CGC TTG AGG CAG CAG CAG GTG GAG						
GAC TAC GTC ATG GTT CGG GCG GAC CTC GTC TCG CTC TTC GCG AAC TCC GTC GTC GTC CAC CTC						
L M Q Y Q A R L E Q S E K R L R Q Q Q V E						
3720	3730	3740	3750	3760	3770	3780
*	*	*	*	*	*	*
AAG GAC TCC CAG ATC AAG AGC ATC ATT GGC AGG CTG ATG CTG GTG GAG GAG GAG CTG CGC CGG						
TTC CTG AGG GTC TAG TTC TCG TAG TAA CCG TCC GAC TAC GAC CAC CTC CTC CTC GAC GCG GCC						
K D S Q I K S I I G R L M L V E E E L R R						
3790	3800	3810	3820	3830	3840	
*	*	*	*	*	*	
GAC CAC CCC GCC ATG GCT GAG CCG CTG CCT GAA CCC AAG AAG AGG CTG CTC GAC GCT CAG AGA						
CTG GTG GGG CGG TAC CGA CTC GGC GAC GGA CTT GGG TTC TTC TCC GAC GAG CTG CGA GTC TCT						
D H P A M A E P L P E P K K R L L D A Q R						
3850	3860	3870	3880	3890	3900	
*	*	*	*	*	*	
GGC AGC TTC CCC CCT TGG GTC CAA CAA ACC CGC GTG TGA CGC TGG CCC CAC CTT GGA ACG GCC						
CCG TCG AAG GGG GGA ACC CAG GTT GTT TGG GCG CAC ACT GCG ACC GGG GTG GAA CCT TGC CGG						
G S F P P W V Q Q T R V * R W P H L G T A						
3910	3920	3930	3940	3950	3960	
*	*	*	*	*	*	
TGG CCC CCC CAG CCC CAC CCC CAC CCC GGC TGC AGA TCA CAG AGA ACG GCG AGT TCC GGA						
ACC GGG GGG GTC GGG GTG GGG GGG GTG GGG CCG ACG TCT AGT GTC TCT TGC CGC TCA AGG CCT						
W P P Q P H P P H P G C R S Q R T A S S G						
3970	3980	3990	4000	4010	4020	4030
*	*	*	*	*	*	*
ACA CCG CAG ACC ACT AGC CCA CCC AGC ATC ACA GAC CTC CTT CCC TGT GCA CCC TAC CCC GGC						
TGT GGC GTC TGG TGA TCG GGT GGG TCG TAG TGT CTG GAG GAA GGG ACA CGT GGG ATG GGG CCG						
T P Q T T S P P S I T D L L P C A P Y P G						
4040	4050	4060	4070	4080	4090	
*	*	*	*	*	*	
CCA CCC AGC GTC ACA GAC CTC CTT CCC AGT GCA CCC GAC CCT GGA ACA TCA CCA ACC ACC AGG						
GGT GGG TCG CAG TGT CTG GAG GAA GGG TCA CGT GGG CTG GGA CCT TGT AGT GGT TGG TGG TCC						
P P S V T D L L P S A P D P G T S P T T R						
4100	4110	4120	4130	4140	4150	
*	*	*	*	*	*	
ACT GGA CGT CAC CAA GGG ACA GCG GGA TTG TCT CCC TTA ACG CCT CCT TGG GGC ACC CAT CTG						
TGA CCT GCA GTG GTT CCC TGT CGC CCT AAC AGA GGG AAT TGC GGA GGA ACC CCG TGG GTA GAC						
T G R H Q G T A G L S P L T P P W G T H L						

FIGURE 1F



4160	4170	4180	4190	4200	4210	4220														
*	*	*	*	*	*	*														
TCA	ACC	CCA	CTG	CTC	CAT	TCC	AGG	AGG	GAG	AGT	GGG	ACC	CTC	AGC	TGC	CCT	CTC	ACC	CCA	GGA
AGT	TGG	GGT	GAC	GAG	GTA	AGG	TCC	TCC	CTC	TCA	CCC	TGG	GAG	TCG	ACG	GGA	GAG	TGG	GGT	CCT
S	T	P	L	L	H	S	R	R	E	S	G	T	L	S	C	P	L	T	P	G
4230	4240	4250	4260	4270																
*	*	*	*	*																
CAC	CAC	CTA	CCC	CAC	ACA	GAC	CCC	TTC	ACT	CTG	GGG	TGC	TAT	CCC	CAT	CCT				
GTG	GTG	GAT	GGG	GTG	TGT	CTG	GGG	AAG	TGA	GAC	CCC	ACG	ATA	GGG	GTA	GGA				
H	H	L	P	H	T	D	P	F	T	L	G	C	Y	P	H	P				

FIGURE 1G



10	20	30	40	50	60															
*	*	*	*	*	*															
TAA	GGC	CCC	CCA	CCC	CGA	CCC	CGT	CAG	GGG	GCT	CCG	GTT	CAG	GTT	CCT	TGC	CCC	CTC	CTT	CCC
ATT	CCG	GGG	GGT	GGG	GCT	GGG	GCA	GTC	CCC	CGA	GGC	CAA	GTC	CAA	GGA	ACG	GGG	GAG	GAA	GGG
*	G	P	P	P	R	P	R	Q	G	A	P	V	Q	V	P	C	P	L	L	P
70	80	90	100	110	120															
ACC	GCC	AGC	CTC	TCC	GCC	GCT	GCT	CTT	CCT	GCT	TTC	CGG	GGG	AAT	ACC	ACT	TGG	GTC		
TGG	CGG	TCG	GAG	AGG	CGG	CGG	CGA	CGA	GAA	GGA	CGA	CGA	AAG	GCC	CCC	TTA	TGG	TGA	ACC	CAG
T	A	S	L	S	A	A	A	A	L	P	A	A	F	R	G	N	T	T	W	V
130	140	150	160	170	180															
*	*	*	*	*	*															
GCT	CGA	GGA	GGA	AGA	GTG	TCC	CCG	GGG	GGG	AAA	CAG	TAC	AGC	ATG	GAA	GCC	GCC	CCC	GCT	GCG
CGA	GCT	CCT	CCT	TCT	CAC	AGG	GGC	CCC	CCC	TTT	GTC	ATG	TCG	TAC	CTT	CGG	CGG	GGG	CGA	CGC
A	R	G	G	R	V	S	P	G	G	K	Q	Y	S	M	E	A	A	P	A	A
190	200	210	220	230	240	250														
*	*	*	*	*	*	*														
CCC	TTC	CGG	CCC	TCG	CAA	GGC	TTC	CTG	AGC	CGG	AGG	CTA	AAA	AGC	TCC	ATC	AAA	CGT	ACA	AAG
GGG	AAG	GCC	GGG	AGC	GTT	CCG	AAG	GAC	TCG	GCC	TCC	GAT	TTT	TCG	AGG	TAG	TTT	GCA	TGT	TTC
P	F	R	P	S	Q	G	F	L	S	R	R	L	K	S	S	I	K	R	T	K
260	270	280	290	300	310															
*	*	*	*	*	*															
TCA	CAA	CCC	AAA	CTT	GAC	CGG	ACC	AGC	AGC	TTT	CGA	CAG	ATC	CTG	CCT	CGC	TTC	CGA	AGT	GCT
AGT	GTT	GGG	TTT	GAA	CTG	GCC	TGG	TCG	TCG	AAA	GCT	GTC	TAG	GAC	GGA	GCG	AAG	GCT	TCA	CGA
S	Q	P	K	L	D	R	T	S	S	F	R	Q	I	L	P	R	F	R	S	A
320	330	340	350	360	370															
*	*	*	*	*	*															
GAC	CAT	GAC	CGG	GCC	CGG	CTG	ATG	CAG	AGC	TTC	AAG	GAG	TCT	CAC	TCC	CAT	GAG	TCC	CTG	CTG
CTG	GTA	CTG	GCC	CGG	GCC	GAC	TAC	GTC	TCG	AAG	TTC	CTC	AGA	GTG	AGG	GTA	CTC	AGG	GAC	GAC
D	H	D	R	A	R	L	M	Q	S	F	K	E	S	H	S	H	E	S	L	L
380	390	400	410	420	430	440														
*	*	*	*	*	*	*														
AGT	CCC	AGC	AGT	GCT	GAG	GCC	CTG	GAG	CTC	AAC	CTG	GAT	GAA	GAC	TCC	ATT	ATC	AAG	CCA	
TCA	GGG	TCG	TCA	CGA	CGA	CTC	CGG	GAC	CTC	GAG	TTG	GAC	CTA	CTT	CTG	AGG	TAA	TAG	TTC	GGT
S	P	S	S	A	A	E	A	L	E	N	L	D	E	D	S	I	I	K	P	
450	460	470	480	490	500															
*	*	*	*	*	*															
GTA	CAC	AGC	TCC	ATC	CTG	GGC	CAG	GAG	TTC	TGC	TTT	GAG	GTA	ACA	ACA	TCG	TCT	GGG	ACA	AAA
CAT	GTG	TCG	AGG	TAG	GAC	CCG	GTC	CTC	AAG	ACG	AAA	CTC	CAT	TGT	TGT	AGC	AGA	CCC	TGT	TTT
V	H	S	S	I	L	G	Q	E	F	C	F	E	V	T	T	S	S	G	T	K
510	520	530	540	550	560															
*	*	*	*	*	*															
TGT	TTT	GCC	TGT	CGG	TCT	GCA	GCC	GAA	AGG	GAC	AAA	TGG	ATT	GAG	AAT	CTA	CAG	AGG	GCT	GTG
ACA	AAA	CGG	ACA	GCC	AGA	CGT	CGG	CTT	TCC	CTG	TTT	ACC	TAA	CTC	TTA	GAT	GTC	TCC	CGA	CAC
C	F	A	C	R	S	A	A	E	R	D	K	W	I	E	N	L	Q	R	A	V
570	580	590	600	610	620	630														
*	*	*	*	*	*	*														
AAA	CCC	AAC	AAG	GAC	AAC	AGC	CGC	CGG	GTA	GAT	AAC	GTG	CTG	AAA	CTA	TGG	ATC	ATA	GAA	GCT
TTT	GGG	TTG	TTC	CTG	TTG	TCG	GCG	GCC	CAT	CTA	TTG	CAC	GAC	TTT	GAT	ACC	TAG	TAT	CTT	CGA
K	P	N	K	D	N	S	R	R	V	D	N	V	L	K	L	W	I	I	E	A

FIGURE 2A



640	650	660	670	680	690	
*	*	*	*	*	*	
CGA GAG CTG CCC CCC AAG AAG CGA TAT TAC TGC GAG TTA TGC CTG GAC GAC ATG CTC TAT GCA	GCT CTC GAC GGG GGG TTC TTC GCT ATA ATG ACG CTC AAT ACG GAC CTG CTG TAC GAG ATA CGT	R E L P P K K R Y Y C E L C L D D M L Y A				
700	710	720	730	740	750	
*	*	*	*	*	*	
CGG ACC ACT TCC AAG CCC CGC TCA GCC TCA GGA GAC ACT GTC TTT TGG GGC GAG CAC TTC GAG	GCC TGG TGA AGG TTC GGG GCG AGT CGG AGT CCT CTG TGA CAG AAA ACC CCG CTC GTG AAG CTC	R T T S K P R S A S G D T V F W G E H F E				
780	790	800	810	820	830	
*	*	*	*	*	*	
TTT AAC AAC CTG CCT GCT GTC CGG GCG CTG CGG CTG CAT CTG TAC CGT GAC TCG GAC AAA AAG	AAA TTG TTG GAC GGA CGA CAG GCC CGC GAC GCC GAC GTA GAC ATG GCA CTG AGC CTG TTT TTC	F N N L P A V R A L R L H L Y R D S D K K				
820	830	840	850	860	870	880
*	*	*	*	*	*	*
CGG AAG AAG GAC AAG GCA GGC TAC GTT GGC CTG GTG ACT GTT CCA GTG GCC ACC CTG GCT GGG	GCC TTC TTC CTG TTC CGT CCG ATG CAA CCG GAC CAC TGA CAA GGT CAC CGG TGG GAC CGA CCC	R K K D K A G Y V G L V T V P V A T L A G				
890	900	910	920	930	940	
*	*	*	*	*	*	
CGC CAC TTC ACA GAG CAG TGG TAC CCC GTG ACC CTG CCA ACA GGA AGT GGG GGC TCT GGG GGT	GCG GTG AAG TGT CTC GTC ACC ATG GGG CAC TGG GAC GGT TGT CCT TCA CCC CCG AGA CCC CCA	R H F T E Q W Y P V T L P T G S G G S G G				
950	960	970	980	990	1000	
*	*	*	*	*	*	
ATG GGC TCG GGG GGA GGA GGG GGG TCA GGG GGC GGC TCA GGG GGC AAA GGG AAA GGA GGC TGT	TAC CCG AGC CCC CCT CCT CCC CCC AGT CCC CCG CCG AGT CCC CCG TTT CCC TTT CCT CCG ACA	M G S G G G S G G G S G G K G K G K G G C				
1010	1020	1030	1040	1050	1060	1070
*	*	*	*	*	*	*
CCT GCT GTG CGG CTG AAG GCC CGT TAC CAG ACA ATG AGT ATC CTG CCC ATG GAG CTA TAT AAG	CCA CGA CAC GCC GAC TTC CGG GCA ATG GTC TGT TAC TCA TAG GAC GGG TAC CTC GAT ATA TTC	P A V R L K A R Y Q T M S I L P M E L Y K				
1080	1090	1100	1110	1120	1130	
*	*	*	*	*	*	
GAG TTT GCA GAA TAT GTG ACC AAC CAC TAC CGC ATG CTG TGT GCC GTG CTG GAG CCC GCC CTC	CTC AAA CGT CTT ATA CAC TGG TTG GTG ATG GCG TAC GAC ACA CGG CAC GAC CTC GGG CGG GAG	E F A E Y V T N H Y R M L C A V L E P A L				
1140	1150	1160	1170	1180	1190	
*	*	*	*	*	*	
AAT GTC AAG GGC AAG GAG GAG GTC GCT AGT GCA CTG GTT CAC ATC CTG CAA AGC ACA GGC AAG	TTA CAG TTC CCG TTC CTC CTC CAG CGA TCA CGT GAC CAA GTG TAG GAC GTT TCG TGT CCG TTC	N V K G K E E V A S A L V H I L Q S T G K				
1200	1210	1220	1230	1240	1250	1260
*	*	*	*	*	*	*
GCC AAG GAC TTC CTT TCA GAC ATG GCC ATG TCA GAG GTA GAC CGG TTC ATG GAG CGG GAA CAC	CGG TTC CTG AAG GAA AGT CTG TAC CGG TAC AGT CTC CAT CTG GCC AAG TAC CTC GCC CTT GTG	A K D F L S D M A M S E V D R F M E R E H				
1270	1280	1290	1300	1310	1320	
*	*	*	*	*	*	
CTC ATA TTC CGC GAG AAC ACG CTC GCC ACT AAA GCC ATA GAA GAG TAT ATG AGA CTG ATT GGC	GAG TAT AAG GCG CTC TTG TGC GAG CGG TGA TTT CGG TAT CTT CTC ATA TAC TCT GAC TAA CCG	E I F R E N T L A T K A I E E Y M R L I G				

FIGURE 2B



1330	1340	1350	1360	1370	1380	
*	*	*	*	*	*	
CAG AAA TAC CTC AAG GAT GCC ATT GGG GAG TTC ATC CGG GCT CTG TAT GAA TCT GAG GAG AAC	GTC TTT ATG GAG TTC CTA CGG TAA CCC CTC AAG TAG GCC CGA GAC ATA CTT AGA CTC CTC TTG	Q K Y L K D A I G E F I R A L Y E S E E N				
1390	1400	1410	1420	1430	1440	
*	*	*	*	*	*	
TGT GAA GTA GAC CCC ATC AAG TGC ACA GCG TCC AGT CTG GCA GAG CAC CAG GCC AAC CTG CGG	ACA CTT CAT CTG GGG TAG TTC ACG TGT CGC AGG TCA GAC CGT CTC GTG GTC CGG TTG GAC GCC	C E V D P I K C T A S S L A E H Q A N L R				
1450	1460	1470	1480	1490	1500	1510
*	*	*	*	*	*	*
ATG TGC TGT GAG TTG GCC CTG TGC AAG GTG GTC AAC TCC CAT TGC GTG TTC CCG AGG GAG CTG	TAC ACG ACA CTC AAC CGG GAC ACG TTC CAC CAG TTG AGG GTA ACG CAC AAG GGC TCC CTC GAC	M C C E L A L C K V V N S H C V F P R E L				
1520	1530	1540	1550	1560	1570	
*	*	*	*	*	*	
AAG GAG GTG TTT GCA TCA TGG CGG CTG CGC TGT GCA GAG CGG GGC CGG GAG GAC ATT GCT GAC	TTC CTC CAC AAA CGT AGT ACC GCC GAC GCG ACA CGT CTC GCC CCG GCC CTC CTG TAA CGA CTG	K E V F A S W R L R C A E R G R E D I A D				
1580	1590	1600	1610	1620	1630	
*	*	*	*	*	*	
AGG CTG ATC AGC GCC TCG CTC TTC CTG CGC TTC CTC TGC CCG GCC ATC ATG TCG CCC AGT CTG	TCC GAC TAG TCG CGG AGC GAG AAG GAC GCG AAG GAG ACG GGC CGG TAG TAC AGC GGG TCA GAC	R L I S A S L F L R F L C P A I M S P S L				
1640	1650	1660	1670	1680	1690	1700
*	*	*	*	*	*	*
TTT GGA CTG ATG CAG GAG TAC CCA GAT GAG CAG ACC TCA CGA ACC CTC ACC CTC ATC GCC AAG	AAA CCT GAC TAC GTC CTC ATG GGT CTA CTC GTC TGG AGT GCT TGG GAG TGG GAG TAG CGG TTC	F G L M Q E Y P D E Q T S R T L T L I A K				
1710	1720	1730	1740	1750	1760	
*	*	*	*	*	*	
GTT ATC CAG AAC CTG GCC AAC TTT TCC AAG TTT ACC TCA AAG GAG GAC TTC CTG GGC TTC ATG	CAA TAG GTC TTG GAC CGG TTG AAA AGG TTC AAA TGG AGT TTC CTC CTG AAG GAC CCG AAG TAC	V I Q N L A N F S K F T S K E D F L G F M				
1770	1780	1790	1800	1810	1820	
*	*	*	*	*	*	
AAC GAG TTT CTG GAG CTG GAG TGG GGT TCT ATG CAG CAA TTC TTG TAT GAG ATA TCC AAC CTG	TTG CTC AAA GAC CTC GAC CTC ACC CCA AGA TAC GTC GTT AAG AAC ATA CTC TAT AGG TTG GAC	N E F L E W G S M Q Q F L Y E I S N L				
1830	1840	1850	1860	1870	1880	1890
*	*	*	*	*	*	*
GAC ACA CTG ACC AAC AGC AGC AGT TTT GAG GGC TAC ATA GAC TTG GGC CGC GAG CTC TCC ACA	CTG TGT GAC TGG TTG TCG TCG AAA CTC CCG ATG TAT CTG AAC CCG GCG CTC GAG AGG TGT	D T L T N S S S F E G Y I D L G R E L S T				
1900	1910	1920	1930	1940	1950	
*	*	*	*	*	*	
CTT CAC GCC CTG CTC TGG GAG GTG CTG CCC CAG CTC AGC AAG GAA GCC CTC CTG AAG CTG GGC	GAA GTG CGG GAC GAG ACC CTC CAC GAC GGG GTC GAG TCG TTC CTT CGG GAG GAC TTC GAC CCG	L H A L L W E V L P Q L S K E A L L K L G				

FIGURE 2C



1960	1970	1980	1990	2000	2010	
*	*	*	*	*	*	
CCG CTG CCC CGG CTC CTC AGC GAC ATC AGC ACA GCC CTG AGG AAC CCT AAC ATC CAA AGG CAG	GGC GAC GGG GCC GAG GAG TCG CTG TAG TCG TGT CGG GAC TCC TTG GGA TTG TAG GTT TCC GTC	P L P R L L S D I S T A L R N P N I Q R Q				
2020	2030	2040	2050	2060	2070	
*	*	*	*	*	*	
CCG AGC CGC CAG AGC GAG CGC GCT CGG TCT CAG CCC ATG GTG CTG CGC GGG CCG TCA GCC GAG	GGC TCG GCG GTC TCG CTC GCG CGA GCC AGA GTC GGG TAC CAC GAC GCG CCC GGC AGT CGG CTC	P S R Q S E R A R S Q P M V L R G P S A E				
2080	2090	2100	2110	2120	2130	2140
*	*	*	*	*	*	*
ATG CAG GGC TAC ATG ATG CGG GAC CTC AAC AGC TCC ATC GAC CTT CAG TCC TTC ATG GCT CGA	TAC GTC CCG ATG TAC TAC GCC CTG GAG TTG TCG AGG TAG CTG GAA GTC AGG AAG TAC CGA GCT	M Q G Y M M R D L N S S I D L Q S F M A R				
2150	2160	2170	2180	2190	2200	
*	*	*	*	*	*	
GGC CTC AAC AGC TCT ATG GAC ATG GCT CGC CTC CCC TCC CCA ACC AAG GAG AAA CCC CCG CCG	CCG GAG TTG TCG AGA TAC CTG TAC CGA GCG GAG GGG AGG GGT TGG TTC CTC TTT GGG GGC GGC	G L N S S M D M A R L P S P T K E K P P P				
2210	2220	2230	2240	2250	2260	
*	*	*	*	*	*	
CCC CCT CCC GGT GGG GGT AAA GAC CTG TTC TAT GTG AGC CGG CCA CCA CTG GCC CGG TCC TCC	GGG GGA GGG CCA CCC CCA TTT CTG GAC AAG ATA CAC TCG GCC GGT GGT GAC CGG GCC AGG AGG	P P P G G K D L F Y V S R P P L A R S S				
2270	2280	2290	2300	2310	2320	2330
*	*	*	*	*	*	*
CCA GCA TAC TGC ACG AGC AGC TCG GAC ATC ACA GAG CCG GAG CAG AAG ATG CTG AGT GTC AAC	GGT CGT ATG ACG TGC TCG AGC CTG TAG TGT CTC GGC CTC GTC TTC TAC GAC TCA CAG TTG	P A Y C T S S S D I T E P E Q K M L S V N				
2340	2350	2360	2370	2380	2390	
*	*	*	*	*	*	
AAG AGT GTG TCC ATG CTG GAC CTG CAG GGC GAC GGG CCT GGG GGC CGC CTT AAC AGC AGT AGT	TTC TCA CAC AGG TAC GAC CTG GAC GTC CCG CTG CCC GGA CCC CCG GCG GAA TTG TCG TCA TCA	K S V S M L D L Q G D G P G G R L N S S S				
2400	2410	2420	2430	2440	2450	
*	*	*	*	*	*	
GTT TCC AAC CTG GCA GCT GTT GGG GAC CTG TTG CAC TCA AGC CAG GCT TCA CTG ACA GCA GCC	CAA AGG TTG GAC CGT CGA CAA CCC CTG GAC AAC GTG AGT TCG GTC CGA AGT GAC TGT CGT CGG	V S N L A A V G D L L H S S Q A S L T A A				
2460	2470	2480	2490	2500	2510	2520
*	*	*	*	*	*	*
TTG GGG TTG CGG CCT GCA CCT GCC GGG CGC CTC TCC CAA GGG AGT GGC TCT TCC ATC ACA GCA	AAC CCC AAC GCC GGA CGT GGA CGG CCC GCG GAG AGG GTT CCC TCA CCG AGA AGG TAG TGT CGT	L G L R P A P A G R L S Q G S G S S I T A				
2530	2540	2550	12560	2570	2580	
*	*	*	*	*	*	
GCC GGC ATG CGC CTC AGC CAG ATG GGT GTC ACT ACG GAT GGT GTC CCC GCC CAG CAA CTG CGC	CGG CCG TAC GCG GAG TCG GTC TAC CCA CAG TGA TGC CTA CCA CAG GGG CGG GTC GTT GAC GCG	A G M R L S Q M G V T T D G V P A Q Q L R				

FIGURE 2D



2590	2600	2610	2620	2630	2640	
*	*	*	*	*	*	
ATC CCT CTT TTC CAG AAC CCT CTC TTC CAT ATG GCT GCC GAT GGA CCA GGG CCC CCA GCA	TAG GGA GAA AGG AAG GTC TTG GGA GAG AAG GTA TAC CGA CGG CTA CCT GGT CCC GGG GGT CGT	I P L S F Q N P L F H M A A D G P G P P A				
2650	2660	2670	2680	2690	2700	
*	*	*	*	*	*	
GGC CAT GGA GGG AGC AGT GGC CAT GGT CCA CCT TCC TCC CAT CAC CAC CAC CAC CAC CAC	CCG GTA CCT CCC TCG TCA CCG GTA CCA GGT GGA AGG AGG GTA GTG GTG GTG GTG GTG GTG GTG	G H G G S S G H G P P S S H H H H H H H H H				
2710	2720	2730	2740	2750	2760	2770
*	*	*	*	*	*	*
CAT CAC CGA GGG GGA GAA CCC CCA GGG GAC ACT TTT GCC CCG TTC CAT GGC TAT AGC AAG AGC	GTA GTG GCT CCC CCT TGG GGT CCC CTG TGA AAA CGG GGC AAG GTA CCG ATA TCG TTC TCG	H H R G G E P P G D T F A P F H G Y S K S				
2780	2790	2800	2810	2820	2830	
*	*	*	*	*	*	
GAG GAC CTC TCT ACA GGG GTC CCT AAG CCC CCT GCG GCC TCC ATC CTT CAC AGC CAC AGC TAC	CTC CTG GAG AGA TGT CCC CAG GGA TTC GGG GGA CGC CGG AGG TAG GAA GTG TCG GTG TCG ATG	E D L S T G V P K P P A A S I L H S H S Y				
2840	2850	2860	2870	2880	2890	
*	*	*	*	*	*	
AGT GAT GAG TTT GGA CCC TCT GGT ACT GAT TTT ACC CGT CGG CAG CTC TCA CTT CAG GAC AAC	TCA CTA CTC AAA CCT GGG AGA CCA TGA CTA AAA TGG GCA GCC GTC GAG AGT GAA GTC CTG TTG	S D E F G P S G T D F T R R Q L S L Q D N				
2900	2910	2920	2930	2940	2950	2960
*	*	*	*	*	*	*
CTA CAG CAC ATG CTC TCC CCG CCC CAG ATC ACC ATC GGT CCC CAG AGG CCA GCT CCC TCA GGG	GAT GTC GTG TAC GAG AGG GGC GGG GTC TAG TGG TAG CCA GGG GTC TCC GGT CGA GGG AGT CCC	L Q H M L S P P Q I T I G P Q R P A P S G				
2970	2980	2990	3000	3010	3020	
*	*	*	*	*	*	
CCA GGA GGG GGC AGT GGT GGG GGC AGT GGT GGG GGC GGT GGG GGC CAG CCA CCT CCC TTG CAG	GGT CCT CCC CCG TCA CCA CCC CCG TCA CCA CCC CCG CCA CCC CCG GTC GGT GGA GGG AAC GTC	P G G G S G G S G G G G G G Q P P P L Q				
3030	3040	3050	3060	3070	3080	
*	*	*	*	*	*	
AGG GGC AAA TCT CAG CAG TTG ACA GTG AGT GCT GCC CAG AAA CCC CGG CCG TCC AGC GGG AAC	TCC CCG TTT AGA GTC GTC AAC TGT CAC TCA CGA CGG GTC TTT GGG GCC GGC AGG TCG CCC TTG	R G K S Q Q L T V S A A Q K P R P S S G N				
3090	3100	3110	3120	3130	3140	3150
*	*	*	*	*	*	*
CTA TTG CAG TCC CCG GAA CCA AGT TAT GGT CCT GCC CGT CCA CGG CAA CAG AGC CTC AGC AAA	GAT AAC GTC AGG GGC CTT GGT TCA ATA CCA GGA CGG GCA GGT GCC GTT GTC TCG GAG TCG TTT	L L Q S P E P S Y G P A R P R Q Q S L S K				
3160	3170	3180	3190	3200	3210	
*	*	*	*	*	*	
GAG GGC AGC ATT GGG GGC AGC GGG GGC AGC GGT GGC GGA GGG GGT GGG GGG CTC AAG CCC TCC	CTC CCG TCG TAA CCC CCG TCG CCC CCG TCG CCA CGG CCT CCC CCA CCC CCC GAG TTC GGG AGG	E G S I G G S G G S G G G G G L K P S				
3220	3230	3240	3250	3260	3270	
*	*	*	*	*	*	
ATC ACC AAG CAG CAT TCC CAG ACT CCA TCC ACG CTG AAC CCC ACG ATG CCG GCC TCG GAG CGG	TAG TGG TTC GTC GTA AGG GTC TGA GGT AGG TGC GAC TTG GGG TGC TAC GGC CGG AGC CTC GCC	I T K Q H S Q T P S T L N P T M P A S E R				

FIGURE 2E



3280	3290	3300	3310	3320	3330															
*	*	*	*	*	*															
ACT	GTA	GCC	TGG	GTG	TCC															
AAT	ATG	CCT	CAC	CTG	TCC															
TGA	CAT	CGG	ACC	CAC	AGG															
T	V	A	W	V	S															
M	N	M	P	H	L															
S	A	D	A	S	A															
H	I	E	I	S	A															
I	E	E	S	A	H															
E	E	H	I	E	I															
3340	3350	3360	3370	3380	3390	3400														
*	*	*	*	*	*	*														
CGG	GAA	GAG	TAC	AAG	CTG	AAG	GAG	TAC	TCG	AAG	TCC	ATG	GAC	GAG	AGC	CGA	CTG	GAC	AGG	GTG
GCC	CTT	CTC	ATG	TTC	GAC	TTC	CTC	ATG	AGC	TTC	AGG	TAC	CTG	CTC	TCG	GCT	GAC	CTG	TCC	CAC
R	E	E	Y	K	L	K	E	Y	S	K	S	M	D	E	S	R	L	D	R	V
3410	3420	3430	3440	3450	3460															
*	*	*	*	*	*															
AAG	GAG	TAC	GAG	GAG	GAG	ATC	CAC	TCA	CTG	AAG	GAA	AGG	CTA	CAC	ATG	TCC	AAC	CGG	AAG	CTG
TTC	CTC	ATG	CTC	CTC	TAG	GTG	AGT	GAC	TTC	CTT	TCC	GAT	GTG	TAC	AGG	TTG	GCC	TTC	GAC	
K	E	Y	E	E	I	H	S	L	K	E	R	L	H	M	S	N	R	K	L	
3470	3480	3490	3500	3510	3520															
*	*	*	*	*	*															
GAA	GAG	TAC	GAG	CGG	AGG	CTG	CTG	TCC	CAG	GAA	GAG	CAG	ACC	AGC	AAG	ATC	CTG	ATG	CAG	TAC
CTT	CTC	ATG	CTC	GCC	TCC	GAC	GAC	AGG	GTC	CTT	CTC	GTC	TGG	TCG	TTC	TAG	GAC	TAC	GTC	ATG
E	E	Y	E	R	R	L	L	S	Q	E	E	Q	T	S	K	I	L	M	Q	Y
3530	3540	3550	3560	3570	3580	3590														
*	*	*	*	*	*	*														
CAA	GCC	CGC	CTG	GAG	CAG	AGC	GAG	AAG	CGC	TTG	AGG	CAG	CAG	GTG	GAG	AAG	GAC	TCC	CAG	
GTT	CGG	GCG	GAC	CTC	GTC	TCG	CTC	TTC	GCG	AAC	TCC	GTC	GTC	GTC	CAC	CTC	TTC	CTG	AGG	GTC
Q	A	R	L	E	Q	S	E	K	R	L	R	Q	Q	Q	V	E	K	D	S	Q
3600	3610	3620	3630	3640	3650															
*	*	*	*	*	*															
ATC	AAG	AGC	ATC	ATT	GGC	AGG	CTG	ATG	CTG	GTG	GAG	GAG	CTG	CGC	CGG	GAC	CAC	CCC	GCC	
TAG	TTC	TCG	TAG	TAA	CCG	TCC	GAC	TAC	GAC	CAC	CTC	CTC	CTC	GAC	GCG	GCC	CTG	GTG	GGG	CGG
I	K	S	I	I	G	R	L	M	L	V	E	E	E	L	R	R	D	H	P	A
3660	3670	3680	3690	3700	3710															
*	*	*	*	*	*															
ATG	GCT	GAG	CCG	CTG	CCT	GAA	CCC	AAG	AAG	AGG	CTG	CTC	GAC	GCT	CAG	AGA	GGC	AGC	TTC	CCC
TAC	CGA	CTC	GGC	GAC	GGA	CTT	GGG	TTC	TTC	TCC	GAC	GAG	CTG	CGA	GTC	TCT	CCG	TCG	AAG	GGG
M	A	E	P	L	P	E	P	K	K	R	L	L	D	A	Q	R	G	S	F	P
3720	3730	3740	3750	3760	3770	3780														
*	*	*	*	*	*	*														
CCT	TGG	GTC	CAA	CAA	ACC	CGC	GTG	TGA	CGC	TGG	CCC	CAC	CTT	GGA	ACG	GCC	TGG	CCC	CCC	CAG
GGA	ACC	CAG	GTT	GTT	TGG	GCG	CAC	ACT	GCG	ACC	GGG	GTG	GAA	CCT	TGC	CGG	ACC	GGG	GGG	GTC
P	W	V	Q	Q	T	*	R	V	R	W	P	H	L	G	T	A	W	P	P	Q
3790	3800	3810	3820	3830	3840															
*	*	*	*	*	*															
CCC	CAC	CCC	CCC	CAC	CCC	GGC	TGC	AGA	TCA	CAG	AGA	ACG	GCG	AGT	TCC	GGA	ACA	CCG	CAG	ACC
GGG	GTG	GGG	GGG	GTG	GGG	CCG	ACG	TCT	AGT	GTC	TCT	TGC	CGC	TCA	AGG	CCT	TGT	GGC	GTC	TGG
P	H	P	P	H	P	G	C	R	S	Q	R	T	A	S	S	G	T	P	Q	T
3850	3860	3870	3880	3890	3900															
*	*	*	*	*	*															
ACT	AGC	CCA	CCC	AGC	ATC	ACA	GAC	CTC	CTT	CCC	TGT	GCA	CCC	TAC	CCC	GGC	CCA	CCC	AGC	GTC
TGA	TCG	GGT	GGG	TCG	TAG	TGT	CTG	GAG	GAA	GGG	ACA	CGT	GGG	ATG	GGG	CCG	GGT	GGG	TCG	CAG
T	S	P	P	S	I	T	D	L	L	P	C	A	P	Y	P	G	P	P	S	V

FIGURE 2F



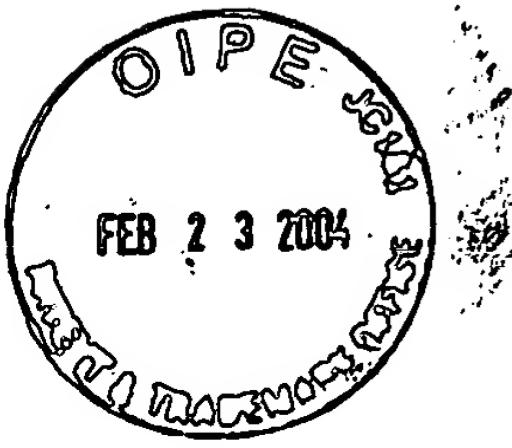
3910	3920	3930	3940	3950	3960															
*	*	*	*	*	*															
ACA	GAC	CTC	CTT	CCC	AGT	GCA	CCC	GAC	CCT	GGA	ACA	TCA	CCA	ACC	ACC	AGG	ACT	GGA	CGT	CAC
TGT	CTG	GAG	GAA	GGG	TCA	CGT	GGG	CTG	GGA	CCT	TGT	AGT	GGT	TGG	TGG	TCC	TGA	CCT	GCA	GTG
T	D	L	L	P	S	A	P	D	P	G	T	S	P	T	T	R	T	G	R	H
3970	3980	3990	4000	4010	4020	4030														
*	*	*	*	*	*	*														
CAA	GGG	ACA	GCG	GGA	TTG	TCT	CCC	TTA	ACG	CCT	CCT	TGG	GGC	ACC	CAT	CTG	TCA	ACC	CCA	CTG
GTT	CCC	TGT	CGC	CCT	AAC	AGA	GGG	AAT	TGC	GGA	GGA	ACC	CCG	TGG	GTA	GAC	AGT	TGG	GGT	GAC
Q	G	T	A	G	L	S	P	L	T	P	P	W	G	T	H	L	S	T	P	L
4040	4050	4060	4070	4080	4090															
*	*	*	*	*	*															
CTC	CAT	TCC	AGG	AGG	GAG	AGT	GGG	ACC	CTC	AGC	TGC	CCT	CTC	ACC	CCA	GGA	CAC	CAC	CTA	CCC
GAG	GTA	AGG	TCC	TCC	CTC	TCA	CCC	TGG	GAG	TCG	ACG	GGA	GAG	TGG	GGT	CCT	GTG	GTG	GAT	GGG
L	H	S	R	R	E	S	G	T	L	S	C	P	L	T	P	G	H	H	L	P
4100	4110	4120	4130																	
*	*	*	*																	
CAC	ACA	GAC	CCC	TTC	ACT	CTG	GGG	TGC	TAT	CCC	CAT	CCT								
G TG	T GT	C TG	G GG	A AG	T GA	G AC	C CC	A CG	A TA	G GGG	G TA	G GA								
H	T	D	P	F	T	L	G	C	Y	P	H	P								

FIGURE 2G



10	20	30	40	50	60															
*	*	*	*	*	*															
TAG	GGA	GAG	ACT	GAG	CTG	CCC	CAA	GCA	CCC	CAT	TTC	CCA	TTT	GCT	CCC	CAG	CAA	GGC	TTC	CTG
ATC	CCT	CTC	TGA	CTC	GAC	GGG	GTT	CGT	GGG	GTA	AAG	GGT	AAA	CGA	GGG	GTC	GTT	CCG	AAG	GAC
*	G	E	T	E	L	P	Q	A	P	H	F	P	F	A	P	Q	Q	G	F	L
70	80	90	100	110	120															
AGC	CGG	AGG	CTA	AAA	AGC	TCC	ATC	AAA	CGT	ACA	AAG	TCA	CAA	CCC	AAA	CTT	GAC	CGG	ACC	AGC
TCG	GCC	TCC	GAT	TTT	TCG	AGG	TAG	TTT	GCA	TGT	TTC	AGT	GTT	GGG	TTT	GAA	CTG	GCC	TGG	TCG
S	R	R	L	K	S	S	I	K	R	T	K	S	Q	P	K	L	D	R	T	S
130	140	150	160	170	180															
AGC	TTT	CGA	CAG	ATC	CTG	CCT	CGC	TTC	CGA	AGT	GCT	GAC	CAT	GAC	CGG	GCC	CGG	CTG	ATG	CAG
TCG	AAA	GCT	GTC	TAG	GAC	GGG	GCG	AAG	GCT	TCA	CGA	CTG	GTA	CTG	GCC	CGG	GCC	GAC	TAC	GTC
S	F	R	Q	I	L	P	R	F	R	S	A	D	H	D	R	A	R	L	M	Q
190	200	210	220	230	240	250														
AGC	TTC	AAG	GAG	TCT	CAC	TCC	CAT	GAG	TCC	CTG	CTG	AGT	CCC	AGC	AGT	GCT	GCT	GAG	GCC	CTG
TCG	AAG	TTC	CTC	AGA	GTG	AGG	GTA	CTC	AGG	GAC	GAC	TCA	GGG	TCG	TCA	CGA	CGA	CTC	CGG	GAC
S	F	K	E	S	H	S	H	E	S	L	L	S	P	S	S	A	A	E	A	L
260	270	280	290	300	310															
GAG	CTC	AAC	CTG	GAT	GAA	GAC	TCC	ATT	ATC	AAG	CCA	GTA	CAC	AGC	TCC	ATC	CTG	GGC	CAG	GAG
CTC	GAG	TTG	GAC	CTA	CTT	CTG	AGG	AAA	TAA	TAG	TTC	GGT	CAT	GTG	TCG	AGG	TAG	GAC	CCG	GTC
E	L	N	L	D	E	D	S	I	I	K	P	V	H	S	S	I	L	G	Q	E
320	330	340	350	360	370															
TTC	TGC	TTT	GAG	GTA	ACA	ACA	TCG	TCT	GGG	ACA	AAA	TGT	TTT	GCC	TGT	CGG	TCT	GCA	GCC	GAA
AAG	ACG	AAA	CTC	CAT	TGT	TGT	AGC	AGA	CCC	TGT	TTT	ACA	AAA	CGG	ACA	GCC	AGA	CGT	CGG	CTT
F	C	F	E	V	T	T	S	S	G	T	K	C	F	A	C	R	S	A	A	E
380	390	400	410	420	430	440														
AGG	GAC	AAA	TGG	ATT	GAG	AAT	CTA	CAG	AGG	GCT	GTG	AAA	CCC	AAC	AAG	GAC	AAC	AGC	CGC	CGG
TCC	CTG	TTT	ACC	TAA	CTC	TTA	GAT	GTC	TCC	CGA	CAC	TTT	GGG	TTG	TTC	CTG	TTG	TCG	GCG	GCC
R	D	K	W	I	E	N	L	Q	R	A	V	K	P	N	K	D	N	S	R	R
450	460	470	480	490	500															
GTA	GAT	AAC	GTG	CTG	AAA	CTA	TGG	ATC	ATA	GAA	GCT	CGA	GAG	CTG	CCC	CCC	AAG	AAG	CGA	TAT
CAT	CTA	TTG	CAC	GAC	TTT	GAT	ACC	TAG	TAT	CTT	CGA	GCT	CTC	GAC	GGG	GGG	TTC	TTC	GCT	ATA
V	D	N	V	L	K	L	W	I	I	E	A	R	E	L	P	P	K	K	R	Y
510	520	530	540	550	560															
TAC	TGC	GAG	TTA	TGC	CTG	GAC	GAC	ATG	CTC	TAT	GCA	CGG	ACC	ACT	TCC	AAG	CCC	CGC	TCA	GCC
ATG	ACG	CTC	AAT	ACG	GAC	CTG	CTG	TAC	GAG	ATA	CGT	GCC	TGG	TGA	AGG	TTC	GGG	GCG	AGT	CGG
Y	C	E	L	C	L	D	D	M	L	Y	A	R	T	T	T	S	K	P	R	S
570	580	590	600	610	620	630														
TCA	GGA	GAC	ACT	GTC	TTT	TGG	GGC	GAG	CAC	TTC	GAG	TTT	AAC	AAC	CTG	CCT	GCT	GTC	CGG	GCG
AGT	CCT	CTG	TGA	CAG	AAA	ACC	CCG	CTC	GTG	AAG	CTC	AAA	TTG	TTG	GAC	GGA	CGA	CAG	GCC	CGC
S	G	D	T	V	F	W	G	E	H	F	E	F	N	N	L	P	A	V	R	A

FIGURE 3A



640	650	660	670	680	690	
*	*	*	*	*	*	
CTG CGG CTG CAT CTG TAC CGT GAC TCG GAC AAA AAG CGG AAG AAG GAC AAG GCA GGC TAC GTT	GAC GCC GAC GTA GAC ATG GCA CTG AGC CTG TTT TTC GCC TTC CTG TTC CGT CCG ATG CAA	L R L H L Y R D S D K K R K K D K A G Y V				
700	710	720	730	740	750	
*	*	*	*	*	*	
GGC CTG GTG ACT GTT CCA GTG GCC ACC CTG GCT GGG CGC CAC TTC ACA GAG CAG TGG TAC CCC	CCG GAC CAC TGA CAA GGT CAC CGG TGG GAC CGA CCC GCG GTG AAG TGT CTC GTC ACC ATG GGG	G L V T V P V A T L A G R H F T E Q W Y P				
780	790	800	810	820	830	
*	*	*	*	*	*	
GTG ACC CTG CCA ACA GGA AGT GGG GGC TCT GGG GGT ATG GGC TCG GGG GGA GGA GGG GGG TCA	CAC TGG GAC GGT TGT CCT TCA CCC CCG AGA CCC CCA TAC CCG AGC CCC CCT CCT CCC CCC AGT	V T L P T G S G G S G G M G S G G G G G S				
820	830	840	850	860	870	880
*	*	*	*	*	*	*
GGG GGC GGC TCA GGG GGC AAA GGG AAA GGA GGC TGT CCT GCT GTG CGG CTG AAG GCC CGT TAC	CCC CCG CCG AGT CCC CCG TTT CCC TTT CCT CCG ACA GGA CGA CAC GCC GAC TTC CGG GCA ATG	G G G S G G K G K G G C P A V R L K A R Y				
890	900	910	920	930	940	
*	*	*	*	*	*	
CAG ACA ATG AGT ATC CTG CCC ATG GAG CTA TAT AAG GAG TTT GCA GAA TAT GTG ACC AAC CAC	GTC TGT TAC TCA TAG GAC GGG TAC CTC GAT ATA TTC CTC AAA CGT CTT ATA CAC TGG TTG GTG	Q T M S I L P M E L Y K E F A E Y V T N H				
950	960	970	980	990	1000	
*	*	*	*	*	*	
TAC CGC ATG CTG TGT GCC GTG CTG GAG CCC GCC CTC AAT GTC AAG GGC AAG GAG GAG GTC GCT	ATG GCG TAC GAC ACA CGG CAC GAC CTC GGG CGG GAG TTA CAG TTC CCG TTC CTC CTC CAG CGA	Y R M L C A V L E P A L N V K G K E E V A				
1010	1020	1030	1040	1050	1060	1070
*	*	*	*	*	*	*
AGT GCA CTG GTT CAC ATC CTG CAA AGC ACA GGC AAG GCC AAG GAC TTC CTT TCA GAC ATG GCC	TCA CGT GAC CAA GTG TAG GAC GTT TCG TGT CCG TTC CGG TTC CTG AAG GAA AGT CTG TAC CGG	S A L V H I L Q S T G K A K D F L S D M A				
1080	1090	1100	1110	1120	1130	
*	*	*	*	*	*	
ATG TCA GAG GTA GAC CGG TTC ATG GAG CGG GAA CAC CTC ATA TTC CGC GAG AAC ACG CTC GCC	TAC AGT CTC CAT CTG GCC AAG TAC CTC GCC CTT GTG GAG TAT AAG GCG CTC TTG TGC GAG CGG	M S E V D R F M E R E H L I F R E N T L A				
1140	1150	1160	1170	1180	1190	
*	*	*	*	*	*	
ACT AAA GCC ATA GAA GAG TAT ATG AGA CTG ATT GGC CAG AAA TAC CTC AAG GAT GCC ATT GGG	TGA TTT CGG TAT CTT CTC ATA TAC TCT GAC TAA CCG GTC TTT ATG GAG TTC CTA CGG TAA CCC	T K A I E E Y M R L I G Q K Y L K D A I G				
1200	1210	1220	1230	1240	1250	1260
*	*	*	*	*	*	*
GAG TTC ATC CGG GCT CTG TAT GAA TCT GAG GAG AAC TGT GAA GTA GAC CCC ATC AAG TGC ACA	CTC AAG TAG GCC CGA GAC ATA CTT AGA CTC CTC TTG ACA CTT CAT CTG GGG TAG TTC ACG TGT	E F I R A L Y E S E E N C E V D P I K C T				

FIGURE 3B



1270	1280	1290	1300	1310	1320
*	*	*	*	*	*
GCG TCC AGT CTG GCA GAG CAC CAG GCC AAC CTG CGG ATG TGC TGT GAG TTG GCC CTG TGC AAG					
CGC AGG TCA GAC CGT CTC GTG GTC CGG TTG GAC GCC TAC ACG ACA CTC AAC CGG GAC ACG TTC					
A S S L A E H Q A N L R M C C E L A L C K					
1330	1340	1350	1360	1370	1380
*	*	*	*	*	*
GTG GTC AAC TCC CAT TGC GTG TTC CCG AGG GAG CTG AAG GAG GTG TTT GCA TCA TGG CGG CTG					
CAC CAG TTG AGG GTA ACG CAC AAG GGC TCC CTC GAC TTC CTC CAC AAA CGT AGT ACC GCC GAC					
V V N S H C V F P R E L K E V F A S W R L					
1390	1400	1410	1420	1430	1440
*	*	*	*	*	*
CGC TGT GCA GAG CGG CGG GAG GAC ATT GCT GAC AGG CTG ATC AGC GCC TCG CTC TTC CTG					
GCG ACA CGT CTC GCC CCG GCC CTC CTG TAA CGA CTG TCC GAC TAG TCG CGG AGC GAG AAG GAC					
R C A E R G R E D I A D R L I S A S L F L					
1450	1460	1470	1480	1490	1500
*	*	*	*	*	*
CGC TTC CTC TGC CCG GCC ATC ATG TCG CCC AGT CTG TTT GGA CTG ATG CAG GAG TAC CCA GAT					
GCG AAG GAG ACG GGC CGG TAG TAC AGC GGG TCA GAC AAA CCT GAC TAC GTC CTC ATG GGT CTA					
R F L C P A I M S P S L F G L M Q E Y P D					
1520	1530	1540	1550	1560	1570
*	*	*	*	*	*
GAG CAG ACC TCA CGA ACC CTC ACC CTC ATC GCC AAG GTT ATC CAG AAC CTG GCC AAC TTT TCC					
CTC GTC TGG AGT GCT TGG GAG TGG GAG TAG CGG TTC CAA TAG GTC TTG GAC CGG TTG AAA AGG					
E Q T S R T L T L I A K V I Q N L A N F S					
1580	1590	1600	1610	1620	1630
*	*	*	*	*	*
AAG TTT ACC TCA AAG GAG GAC TTC CTG GGC TTC ATG AAC GAG TTT CTG GAG CTG GAA TGG GGT					
TTC AAA TGG AGT TTC CTC CTG AAG GAC CCG AAG TAC TTG CTC AAA GAC CTC GAC CTT ACC CCA					
K F T S K E D F L G F M N E F L E L E W G					
1640	1650	1660	1670	1680	1690
*	*	*	*	*	*
TCT ATG CAG CAA TTC TTG TAT GAG ATA TCC AAC CTG GAC ACA CTG ACC AAC AGC AGC AGT TTT					
AGA TAC GTC GTT AAG AAC ATA CTC TAT AGG TTG GAC CTG TGT GAC TGG TTG TCG TCG TCA AAA					
S M Q Q F L Y E I S N L D T L T N S S S F					
1710	1720	1730	1740	1750	1760
*	*	*	*	*	*
GAG GGC TAC ATA GAC TTG GGC CGC GAG CTC TCC ACA CTT CAC GCC CTG CTC TGG GAG GTG CTG					
CTC CCG ATG TAT CTG AAC CCG GCG CTC GAG AGG TGT GAA GTG CGG GAC GAG ACC CTC CAC GAC					
E G Y I D L G R E L S T L H A L L W E V L					
1770	1780	1790	1800	1810	1820
*	*	*	*	*	*
CCC CAG CTC AGC AAG GAA GCC CTC CTG AAG CTG GGC CCG CTG CCC CGG CTC CTC AGC GAC ATC					
GGG GTC GAG TCG TTC CTT CGG GAG GAC TTC GAC CCG GGC GAC GGG GCC GAG GAG TCG CTG TAG					
P Q L S K E A L L K L G P L P R L L S D I					
1830	1840	1850	1860	1870	1880
*	*	*	*	*	*
AGC ACA GCC CTG AGG AAC CCT AAC ATC CAA AGG CAG CCG AGC CGC CAG AGC GAG CGC GCT CGG					
TCG TGT CGG GAC TCC TTG GGA TTG TAG GTT TCC GTC GGC TCG GCG GTC TCG CTC GCG CGA GCC					
S T A L R N P N I Q R Q P S R Q S E R A R					

FIGURE 3C



1900	1910	1920	1930	1940	1950	
*	*	*	*	*	*	
TCT CAG CCC ATG GTG CTG CGC GGG CCG TCA GCC GAA ATG CAG GGC TAC ATG ATG CGG GAC CTC						
AGA GTC GGG TAC CAC GAC GCG CCC GGC AGT CGG CTT TAC GTC CCG ATG TAC TAC GCC CTG GAG						
S Q P M V L R G P S A E M Q G Y M M R D L						
1960	1970	1980	1990	2000	2010	
*	*	*	*	*	*	
AAC AGC TCC ATC GAC CTT CAG TCC TTC ATG GCT CGA GGC CTC AAC AGC TCT ATG GAC ATG GCT						
TTG TCG AGG TAG CTG GAA GTC AGG AAG TAC CGA GCT CCG GAG TTG TCG AGA TAC CTG TAC CGA						
N S S I D L Q S F M A R G L N S S M D M A						
2020	2030	2040	2050	2060	2070	
*	*	*	*	*	*	
CGC CTC CCC TCC CCA ACC AAG GAG AAA CCC CCG CCC CCT CCC GGT GGG GGT AAA GAC CTG						
GCG GAG GGG AGG GGT TGG TTC CTC TTT GGG GGC GGC GGG GGA GGG CCA CCC CCA TTT CTG GAC						
R L P S P T K E K P P P P P P G G G K D L						
2080	2090	2100	2110	2120	2130	2140
*	*	*	*	*	*	*
TTC TAT GTG AGC CGG CCA CCA CTG GCC CGG TCC TCC CCA GCA TAC TGC ACG AGC AGC TCG GAC						
AAG ATA CAC TCG GCC GGT GGT GAC CGG GCC AGG AGG GGT CGT ATG ACG TGC TCG TCG AGC CTG						
F Y V S R P P L A R S S P A Y C T S S S D						
2150	2160	2170	2180	2190	2200	
*	*	*	*	*	*	
ATC ACA GAG CCG GAG CAG AAG ATG CTG AGT GTC AAC AAG AGT GTG TCC ATG CTG GAC CTG CAG						
TAG TGT CTC GGC CTC TTC TAC GAC TCA CAG TTG TTC TCA CAC AGG TAC GAC CTG GAC GTC						
I T E P E Q K M L S V N K S V S M L D L Q						
2210	2220	2230	2240	2250	2260	
*	*	*	*	*	*	
GGC GAC GGG CCT GGG GGC CGC CTT AAC AGC AGT AGT GTT TCC AAC CTG GCA GCT GTT GGG GAC						
CCG CTG CCC GGA CCC CCG GCG GAA TTG TCG TCA TCA CAA AGG TTG GAC CGT CGA CAA CCC CTG						
G D G P G G R L N S S S V S N L A A V G D						
2270	2280	2290	2300	2310	2320	2330
*	*	*	*	*	*	*
CTG TTG CAC TCA AGC CAG GCT TCA CTG ACA GCA GCC TTG GGG TTG CGG CCT GCA CCT GCC GGG						
GAC AAC GTG AGT TCG GTC CGA AGT GAC TGT CGT CGG AAC CCC AAC GCC GGA CGT GGA CGG CCC						
L L H S S Q A S L T A A L G L R P A P A G						
2340	2350	2360	2370	2380	2390	
*	*	*	*	*	*	
CGC CTC TCC CAA GGG AGT GGC TCT TCC ATC ACA GCA GCC GGC ATG CGC CTC AGC CAG ATG GGT						
GCG GAG AGG GTT CCC TCA CCG AGA AGG TAG TGT CGT CGG CCG TAC GCG GAG TCG GTC TAC CCA						
R L S Q G S G S I T A A G M R L S Q M G						
2400	2410	2420	2430	2440	2450	
*	*	*	*	*	*	
GTC ACT ACG GAT GGT GTC CCC GCC CAG CAA CTG CGC ATC CCT CTT TCC TTC CAG AAC CCT CTC						
CAG TGA TGC CTA CCA CAG GGG CGG GTC GTT GAC GCG TAG GGA GAA AGG AAG GTC TTG GGA GAG						
V T T D G V P A Q Q L R I P L S F Q N P L						
2460	2470	2480	2490	2500	2510	2520
*	*	*	*	*	*	*
TTC CAT ATG GCT GCC GAT GGA CCA GGG CCC CCA GCA GGC CAT GGA GGG AGC AGT GGC CAT GGT						
AAG GTA TAC CGA CGG CTA CCT GGT CCC GGG GGT CGT CCG GTA CCT CCC TCG TCA CCG GTA CCA						
F H M A A D G P G P P A G H G G S S S G H G						

FIGURE 3D



2530	2540	2550	12560	2570	2580
*	*	*	*	*	*
CCA CCT TCC TCC CAT CAC CAC CAC CAC CAC CAT CAC CAC CGA GGG GGA GAA CCC CCA GGG	GGT GGA AGG AGG GTA GTG GTG GTG GTG GTA GTG GTG GCT CCC CCT CTT GGG GGT CCC				
P P S S H H H H H H H H H R G G E P P G					
2590	2600	2610	2620	2630	2640
*	*	*	*	*	*
GAC ACT TTT GCC CCG TTC CAT GGC TAT AGC AAG AGC GAG GAC CTC TCT ACA GGG GTC CCT AAG	CTG TGA AAA CGG GGC AAG GTA CCG ATA TCG TTC TCG CTC CTG GAG AGA TGT CCC CAG GGA TTC				
D T F A P F H G Y S K S E D L S T G V P K					
2650	2660	2670	2680	2690	2700
*	*	*	*	*	*
CCC CCT GCG GCC TCC ATC CTT CAC AGC CAC AGC TAC AGT GAT GAG TTT GGA CCC TCT GGT ACT	GGG GGA CGC CGG AGG TAG GAA GTG TCG GTG TCG ATG TCA CTA CTC AAA CCT GGG AGA CCA TGA				
P P A A S I L H S H S Y S D E F G P S G T					
2710	2720	2730	2740	2750	2760
*	*	*	*	*	*
GAT TTT ACC CGT CGG CAG CTC TCA CTT CAG GAC AAC CTA CAG CAC ATG CTC TCC CCG CCC CAG	CTA AAA TGG GCA GCC GTC GAG AGT GAA GTC CTG TTG GAT GTC GTG TAC GAG AGG GGC GGG GTC				
D F T R R Q L S L Q D N L Q H M L S P P Q					
2780	2790	2800	2810	2820	2830
*	*	*	*	*	*
ATC ACC ATC GGT CCC CAG AGG CCA GCT CCC TCA GGG CCA GGA GGG GGC AGT GGT GGG GGC AGT	TAG TGG TAG CCA GGG GTC TCC GGT CGA GGG AGT CCC GGT CCT CCC CCG TCA CCA CCC CCG TCA				
I T I G P Q R P A P S G P G G S G G G S					
2840	2850	2860	2870	2880	2890
*	*	*	*	*	*
GGT GGG GGC GGT GGG GGC CAG CCA CCT CCC TTG CAG AGG GGC AAA TCT CAG CAG TTG ACA GTG	CCA CCC CCG CCA CCC CCG GTC GGT GGA GGG AAC GTC TCC CCG TTT AGA GTC GTC AAC TGT CAC				
G G G G G Q P P L Q R G K S Q Q L T V					
2900	2910	2920	2930	2940	2950
*	*	*	*	*	*
AGT GCT GCC CAG AAA CCC CGG CCG TCC AGC GGG AAC CTA TTG CAG TCC CCG GAA CCA AGT TAT	TCA CGA CGG GTC TTT GGG GCC GGC AGG TCG CCC TTG GAT AAC GTC AGG GGC CTT GGT TCA ATA				
S A A Q K P R P S S G N L L Q S P E P S Y					
2970	2980	2990	3000	3010	3020
*	*	*	*	*	*
GGT CCT GCC CGT CCA CGG CAA CAG AGC CTC AGC AAA GAG GGC AGC ATT GGG GGC AGC GGG GGC	CCA GGA CGG GCA GGT GCC GTT GTC TCG GAG TCG TTT CTC CCG TCG TAA CCC CCG TCG CCC CCG				
G P A R P R Q Q S L S K E G S I G G S G G					
3030	3040	3050	3060	3070	3080
*	*	*	*	*	*
AGC GGT GGC GGA GGG GGT GGG GGG CTC AAG CCC TCC ATC ACC AAG CAG CAT TCC CAG ACT CCA	TCG CCA CCG CCT CCC CCA CCC CCC GAG TTC GGG AGG TAG TGG TTC GTC GTA AGG GTC TGA GGT				
S G G G G G G L K P S I T K Q H S Q T P					
3090	3100	3110	3120	3130	3140
*	*	*	*	*	*
TCC ACG CTG AAC CCC ACG ATG CCG GCC TCG GAG CGG ACT GTA GCC TGG GTG TCC AAT ATG CCT	AGG TGC GAC TTG GGG TGC TAC GGC CGG AGC CTC GCC TGA CAT CGG ACC CAC AGG TTA TAC GGA				
S T L N P T M P A S E R T V A W V S N M P					

FIGURE 3E



3160	3170	3180	3190	3200	3210	
*	*	*	*	*	*	
CAC CTG TCC GCT GAC ATC GAG AGT GCA CAC ATT GAG CGG GAA GAG TAC AAG CTG AAG GAG TAC						
GTG GAC AGG CGA CTG TAG CTC TCA CGT GTG TAA CTC GCC CTT CTC ATG TTC GAC TTC CTC ATG						
H L S A D I E S A H I E R E E Y K L K E Y						
3220	3230	3240	3250	3260	3270	
*	*	*	*	*	*	
TCG AAG TCC ATG GAC GAG AGC CGA CTG GAC AGG GTG AAG GAG TAC GAG GAG GAG ATC CAC TCA						
AGC TTC AGG TAC CTG CTC TCG GCT GAC CTG TCC CAC TTC CTC ATG CTC CTC TAG GTG AGT						
S K S M D E S R L D R V K E Y E E E I H S						
3280	3290	3300	3310	3320	3330	
*	*	*	*	*	*	
CTG AAG GAA AGG CTA CAC ATG TCC AAC CGG AAG CTG GAA GAG TAC GAG CGG AGG CTG CTG TCC						
GAC TTC CTT TCC GAT GTG TAC AGG TTG GCC TTC GAC CTT CTC ATG CTC GCC TCC GAC GAC AGG						
L K E R L H M S N R K L E E Y E R R L L S						
3340	3350	3360	3370	3380	3390	3400
*	*	*	*	*	*	*
CAG GAA GAG CAG ACC AGC AAG ATC CTG ATG CAG TAC CAA GCC CGC CTG GAG CAG AGC GAG AAG						
GTC CTT CTC GTC TGG TCG TTC TAG GAC TAC GTC ATG GTT CGG GCG GAC CTC GTC TCG CTC TTC						
Q E E Q T S K I L M Q Y Q A R L E Q S E K						
3410	3420	3430	3440	3450	3460	
*	*	*	*	*	*	
CGC TTG AGG CAG CAG GTG GAG AAG GAC TCC CAG ATC AAG AGC ATC ATT GGC AGG CTG ATG						
GCG AAC TCC GTC GTC GAC CAC CTC TTC CTG AGG GTC TAG TTC TCG TAG TAA CCG TCC GAC TAC						
R L R Q Q V E K D S Q I K S I I G R L M						
3470	3480	3490	3500	3510	3520	
*	*	*	*	*	*	
CTG GTG GAG GAG GAG CTG CGC CGG GAC CAC CCC GCC ATG GCT GAG CCG CTG CCT GAA CCC AAG						
GAC CAC CTC CTC GTC GAC GCG GCC CTG GTG GGG CGG TAC CGA CTC GGC GAC GGA CTT GGG TTC						
L V E E L R R D H P A M A E P L P E P K						
3530	3540	3550	3560	3570	3580	3590
*	*	*	*	*	*	*
AAG AGG CTG CTC GAC GCT CAG AGA GGC AGC TTC CCC CCT TGG GTC CAA CAA ACC CGC GTG TGA						
TTC TCC GAC GAG CTG CGA GTC TCT CCG TCG AAG GGG GGA ACC CAG GTT GTG TGG GCG CAC ACT						
K R L L D A Q R G S F P P W V Q Q T R V *						
3600	3610	3620	3630	3640	3650	
*	*	*	*	*	*	
CGC TGG CCC CAC CTT GGA ACG GCC TGG CCC CCC CAG CCC CAC CCC CAC CCC GGC TGC AGA						
GCG ACC GGG GTG GAA CCT TGC CGG ACC GGG GGG GTC GGG GTG GGG GGG GTG GGG CCG ACG TCT						
R W P H L G T A W P P Q P H P P H P G C R						
3660	3670	3680	3690	3700	3710	
*	*	*	*	*	*	
TCA CAG AGA ACG GCG AGT TCC GGA ACA CCG CAG ACC ACT AGC CCA CCC AGC ATC ACA GAC CTC						
AGT GTC TCT TGC CGC TCA AGG CCT TGT GGC GTC TGG TGA TCG GGT GGG TCG TAG TGT CTG GAG						
S Q R T A S S G T P Q T T S P P S I T D L						
3720	3730	3740	3750	3760	3770	3780
*	*	*	*	*	*	*
CTT CCC TGT GCA CCC TAC CCC GGC CCA CCC AGC GTC ACA GAC CTC CTT CCC AGT GCA CCC GAC						
GAA GGG ACA CGT GGG ATG GGG CCG GGT GGG TCG CAG TGT CTG GAG GAA GGG TCA CGT GGG CTG						
L P C A P Y P G P P S V T D L L P S A P D						

FIGURE 3F



3790	3800	3810	3820	3830	3840															
*	*	*	*	*	*															
CCT	GGA	ACA	TCA	CCA	ACC	ACC	AGG	ACT	GGA	CGT	CAC	CAA	GGG	ACA	GCG	GGA	TTG	TCT	CCC	TTA
GGA	CCT	TGT	AGT	GGT	TGG	TGG	TCC	TGA	CCT	GCA	GTG	GTT	CCC	TGT	CGC	CCT	AAC	AGA	GGG	AAT
P	G	T	S	P	T	T	R	T	G	R	H	Q	G	T	A	G	L	S	P	L
3850	3860	3870	3880	3890	3900															
*	*	*	*	*	*															
ACG	CCT	CCT	TGG	GGC	ACC	CAT	CTG	TCA	ACC	CCA	CTG	CTC	CAT	TCC	AGG	AGG	GAG	AGT	GGG	ACC
TGC	GGA	GGA	ACC	CCG	TGG	GTA	GAC	AGT	TGG	GGT	GAC	GAG	GTA	AGG	TCC	TCC	CTC	TCA	CCC	TGG
T	P	P	W	G	T	H	L	S	T	P	L	L	H	S	R	R	E	S	G	T
3910	3920	3930	3940	3950	3960															
*	*	*	*	*	*															
CTC	AGC	TGC	CCT	CTC	ACC	CCA	GGA	CAC	CAC	CTA	CCC	CAC	ACA	GAC	CCC	TTC	ACT	CTG	GGG	TGC
GAG	TCG	ACG	GGA	GAG	TGG	GGT	CCT	GTG	GTG	GAT	GGG	GTG	TGT	CTG	GGG	AAG	TGA	GAC	CCC	ACG
L	S	C	P	L	T	P	G	H	H	L	P	H	T	D	P	F	T	L	G	C
3970	3980																			
*	*																			
TAT	CCC	CAT	CCT																	
ATA	GGG	GTA	GGA																	
Y	P	H	P																	

FIGURE 3F



1	MQSFKEHSHESSLSPSSAAEALENLDEDSIIKPVHSSILGQEFCFEVTTSSGTKCFAC	60
61	RSAAERDKWIENLQRAVKPNKDNSRRVDNVLKLWIIEARELPPKKRYYCELCLDDMLYAR	120
121	TTSKPRSASGDTFWGEHFEFNLPAVRALRLHLYRDSDKRKDKAGYVGLTVPVATL	180
181	AGRHFTEQWYPVTLPTGGGGGGGGGGGGGGGGKGGCPAVRLKARYQTMSILP	240
241	MELYKEFAEYVTNHYRMLCAVLEPALNVKGKEEVASALVHILQSTGAKDFLSDMAMSEV	300
301	DRFMEREHLIFRENTLATKAIEEYMLIGQKYLKDAIGEFIRALYESEENCEVDPIKCTA	360
361	SSLAEHQANLRMCCELALCKVVNSHCVFPRELKEVFASWRLRCAERGREDIADRLISASL	420
421	FLRFLCPAIMSPSLFGLMQEYPDEQTSRTLTLIAKVIQNLANSKFTSKEDFLGFMNEFL	480
481	ELEWGSMQQFLYEISNLDTLTNSSSFEGYIDLGRELSTLHALLWEVLPQLSKEALLKLGP	540
541	LPRLLSDISTALRNPNIQRQPSRQSERARSQPMVLRGPSAEMQGYMMRDLNNSIDLQSFM	600
601	ARGLNSSMDMARLPSPTKEKPPPPPGGGKDLFYVSRRPLARSSPAYCTSSSDITEPEQK	660
661	MLSVNKSVSMLDLQGDGPGRNLNSSVSNLAAVGDLLHSSQASLTAALGLRPAPAGRLSQ	720
721	GSGSSITAAGMRLSQMGVTTDGVPAQQLRIPLSFQNPLFHMAADGPGPAGHGGSSGHGP	780
781	PSSHHHHHHHHHRGGEPPGDTFAPFHGYSKSEDLSTGVPKPPAASILHSHSYSDEFGPS	840
841	GTDFTRRQLSLQDNLQHMLSPQQITIGPQRPAPSGPGGGGGGGGGGGQPPPLQRGKS	900
901	QQLTVSAAQKPRPSSGNLLQSPEPSYGPAPRQQQLSKEGSIGGSGGGGGGLKPSI	960
961	TKQHSQTPSTLNPTMPASERTVAWVSNMPHLSADIESAHIEREYKLKEYSKMDESRLD	1020
1021	RVKEYEEEIHSKERLHMSNRKLEYYERRLLSQEEQTSKILMQYQARLEQSEKRLRQQQV	1080
1081	EKDSQIKSIIGRLMLVEEELRRDHPAMAEPKLLDAQRGSFPPWVQQTRV	1135

FIGURE 4A

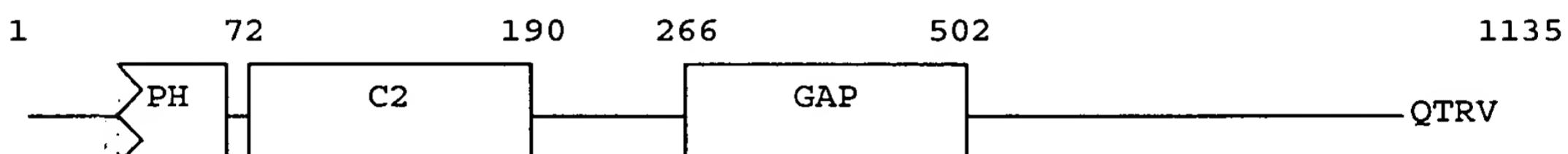


FIGURE 4B

GAPSYN	286	GKAKDFLSDMAMSEVDRFMEREHLIFRENTLATKAIEEYMLIGQKYLKDAIGEFIRALYE	347	
rn	GAP	KLESLLLCTLNDREIS-MEDEATTLFRATTLASTLMEQYMKATATQFVHALKDSILKIME	815	
hs	NF1	1251	HLLYQLLWNMFSKEVE-LADSMQTLFRGNSLASKIMTFCFKVYGATYLQKLL-DPLLRIVI	1311
GAPSYN	348	SEE-----NCEVDPIKCTAS-SLAEHQANLRMCCELALCKVVNSHCVFPRELKEVFASWRLR	403	
rn	GAP	816	SKQ-----SCELSPSKLEKNEDVNTNLAHLLSILSELVEKIFMASEILPPTLRYIYGCLQKS	872
hs	NF1	1312	TSSDWQHVSFEVDPTRLEPSESLEENQRNLLQMTEKFFHAISSSEFPQLRSVCHCLYQV	1372
GAPSYN	404	CAER--GREDIADRLISASLFLRFLCPAIMSPSLFGLMQEYPDEQTSRTLTLIAKVIQNLAN	463	
rn	GAP	873	VQHKWPTNNTMRTRVVSGFVFLRLICPAILNPRMFNIISDSPSPIAARTLTLVAKSVQNLAN	934
hs	NF1	1373	VSQRFPQNSIG---AVGSAMFLRFINPAIVSPYEAGILDKKPPPRIERGLKLMISKIAN	1430
GAPSYN	464	FSKFTSKEDFLGFMNEFLELE-WGSMQQFLYEISNLDTLT	502	
rn	GAP	935	LVEFGAKEPYMEGVNPFIKSN-KHRMIMFLDELGNVPELP	973
hs	NF1	1431	HVLF-TKEEHMRPFNDFVKSNSFDAARRFFLDIASDCPTSD	1469

FIGURE 4C



PLECKSTRIN HOMOLOGY (PH) DOMAIN ALIGNMENT

SynGAP-a	193	P.....VHSSIL GQ.EFCFEVT TSSGTKC... .FACRSAAE	223
Hs p120	516	PKGLIDL SVC SVYVVHDSL F GR.PNCFQIV VQHFSEEH YI FYFAGETPEQ	564
Dm GAP1	805	PICDIPLQEI ASVEQLKDKS FKMQNCFKIV HNDRS..... LIVQTTNCVE	849
Hs Plec	45	PKGMIPLKGS TLTSPCQDFG KR.MFVFKIT TTKQQ...D HFFQAAFLEE	88

SynGAP-a	224	RDKWIENLQR	AVKPNKDNSR	243
Hs p120	565	AEDWMKGLQA	FCNLRKSSPG	584
Dm GAP1	850	EREWF DLLHK	ICLMNSIRMQ	869
Hs Plec	89	RDAWVRDINK	AIKCIEGGQK	108

FIGURE 5



C2 DOMAIN ALIGNMENT

SynGAP-a	245	..VDNVLKLW ..IIEARELPPKKRY. YCELCL.... DDMLYARTTS	281
Hs p120	592	..QVSSLVLH ..IEEAHKLP ...VKHFTNP YCNIYL.... NSVQVAKTH.	629
Rn Syt II	151	DYDFQANQLT VGVLQAAELP ALDMGGTSDP YVKVFLLPD. .KKKKYETKV	198
Bt Rab 3A	411	LYDQDNSSLK CTIIKAKGLK PMDSNGLADP YVKLHLLPGA SKSNKLRTKT	460

SynGAP-a	282	KPRSASGDTV FWGEHFEFNN LP.AVRALRL HLYRD.SDKK RKKDKAGYVG	329
Hs p120	630AREGQNP VWSEEFVFDD LPPDINRFEI TL....SNKT .KKSKDPDIL	671
Rn Syt II	199	...HRKTLNP AFNETFTFKV ..PYQELGGK TLVMAIYDFD RF.SKHDIIG	242
Bt Rab 3A	462	...LRNTRNP IWNETLVYHG I.TDEDMQRK TLRISVCDED KF.GHNEFIG	505

SynGAP-a	330	LTVPVAT.LAGRHFTEQ WY.PVT.LPT	354
Hs p120	672	FMRCQLSR.LQKGHATDE WFLLSSHIPL	698
Rn Syt II	243	EVKPMNTVDL..GQPIEE WRDLQG..G.	266
Bt Rab 3A	506	ETRFSLKLLK PNQRK.NFNI CL..ERVIPM Kragttgsar	542

FIGURE 6



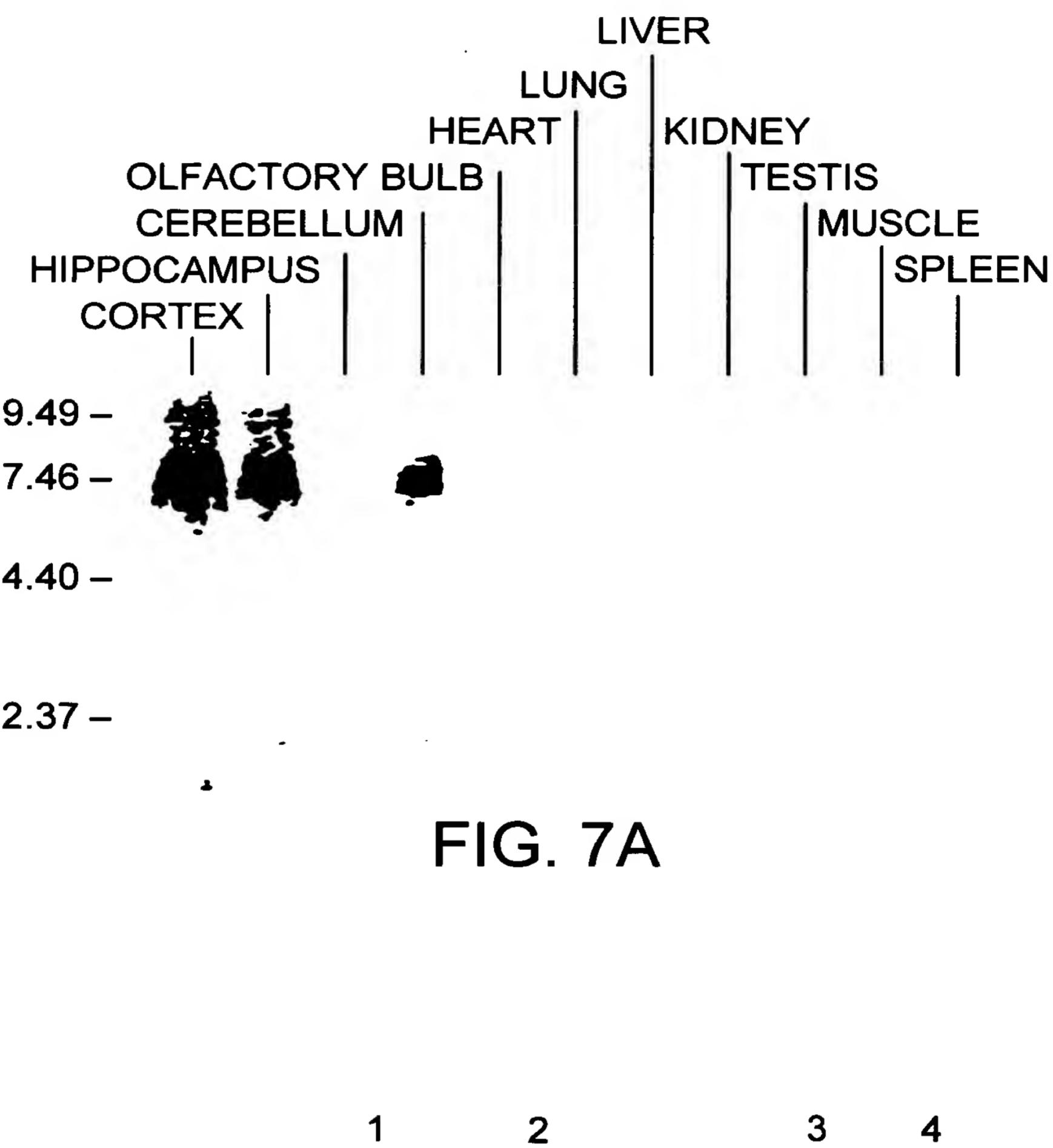


FIG. 7A



FIG. 7B



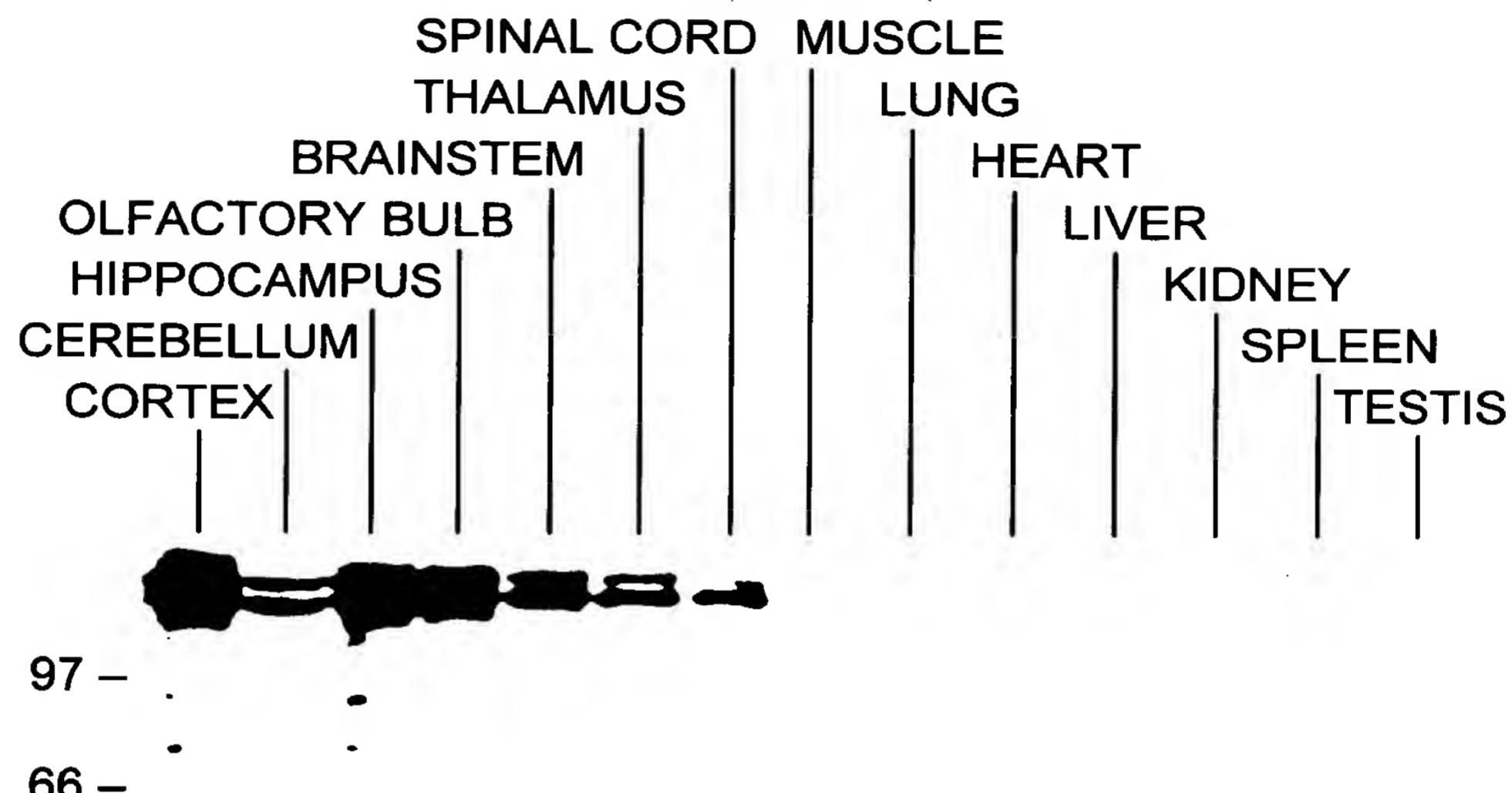
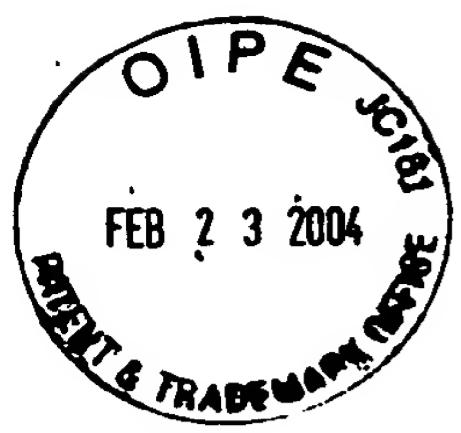


FIG. 7C

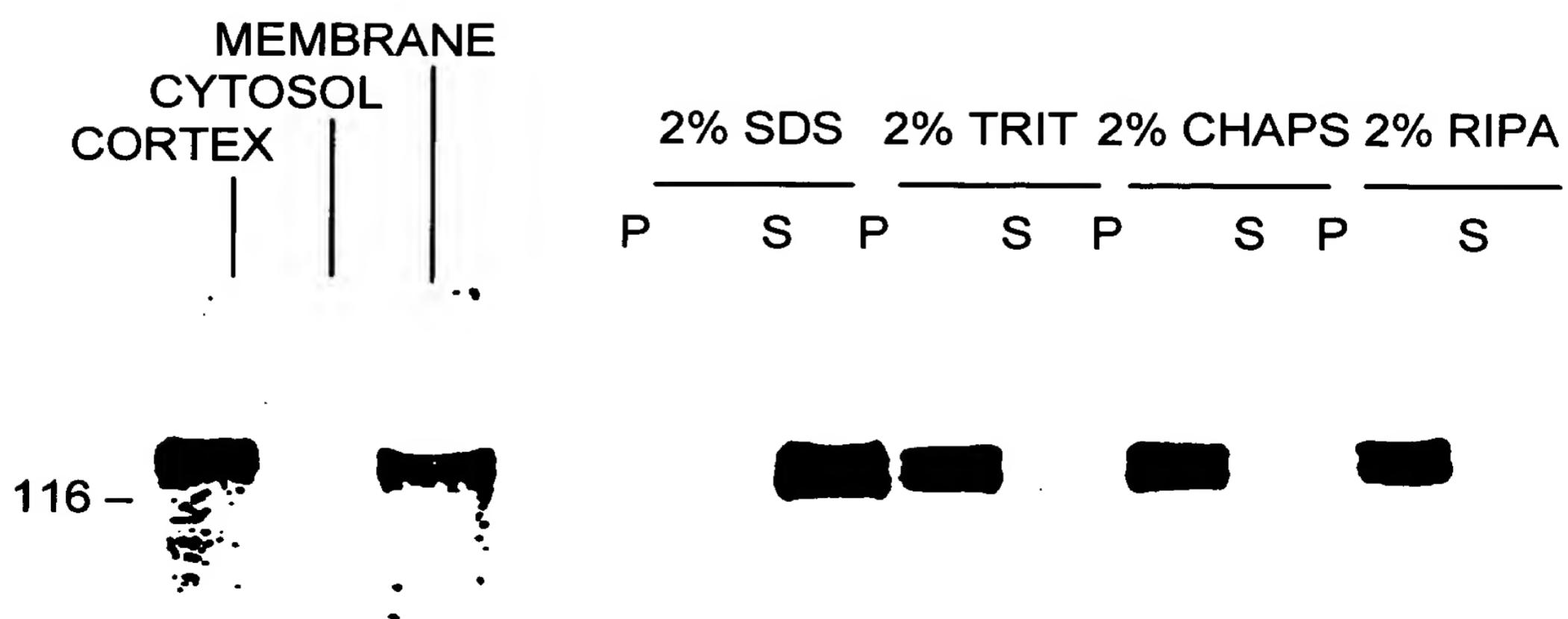


FIG. 7D

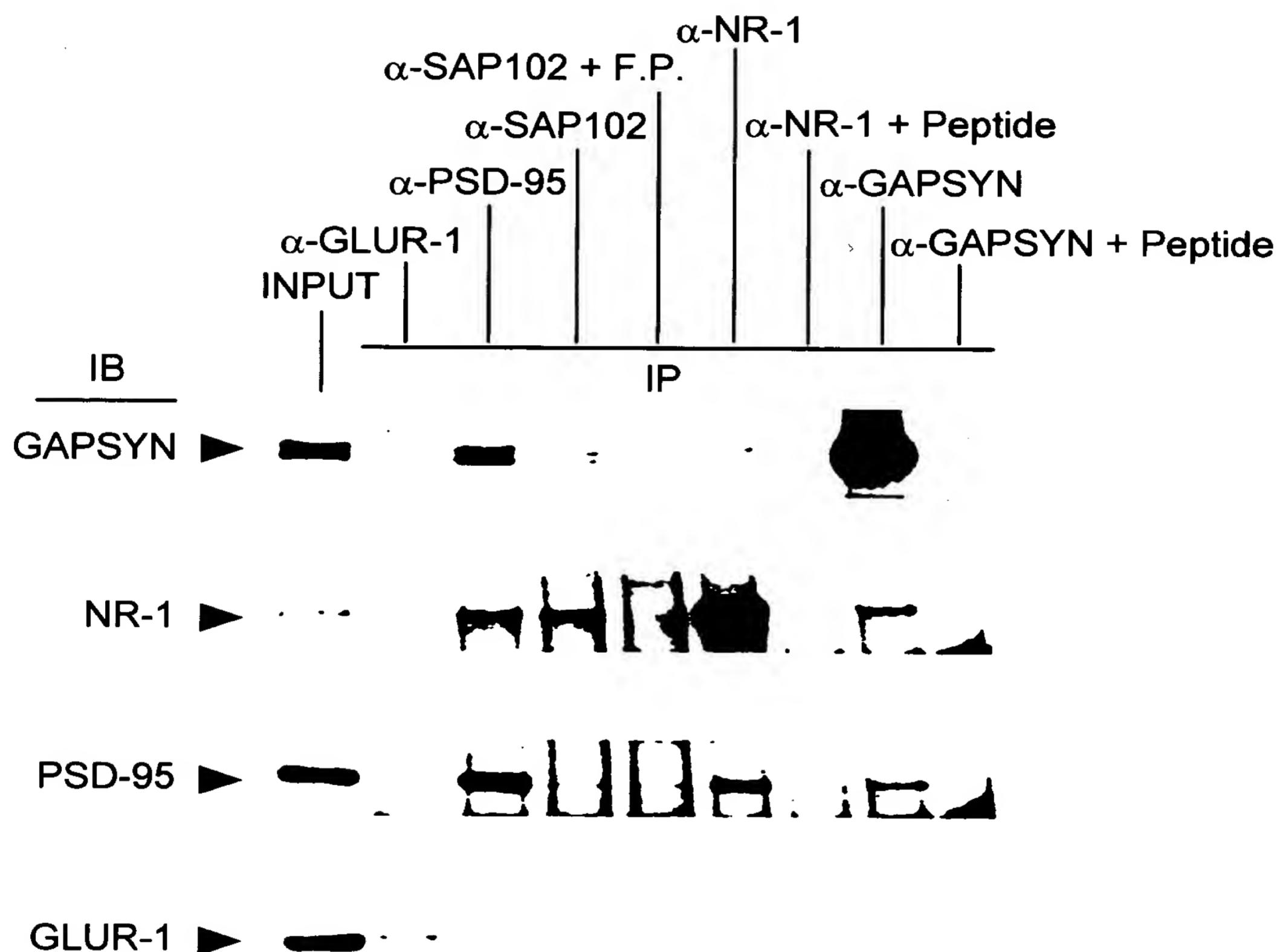


FIG. 8



GAPSYN



FIG. 9A

GAPSYN



FIG. 9B

SYNAPTOPHYSIN



FIG. 9C

OVERLAP



FIG. 9D

GAPSYN (BLOCK)

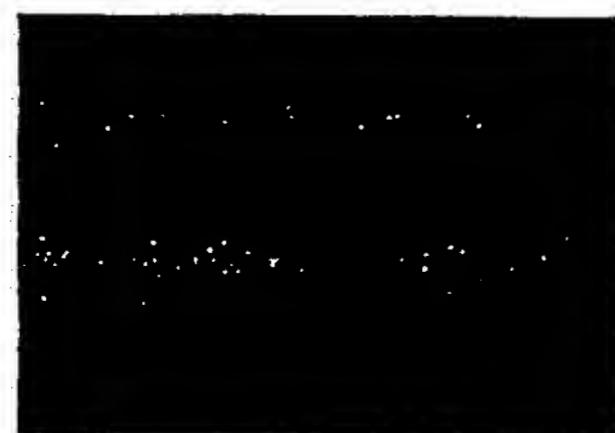


FIG. 9E

SYNAPTOPHYSIN

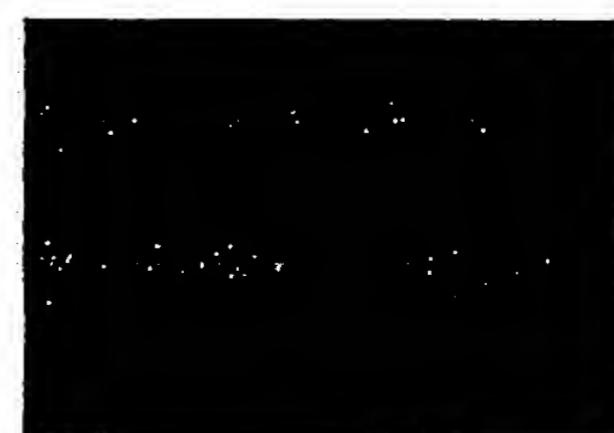
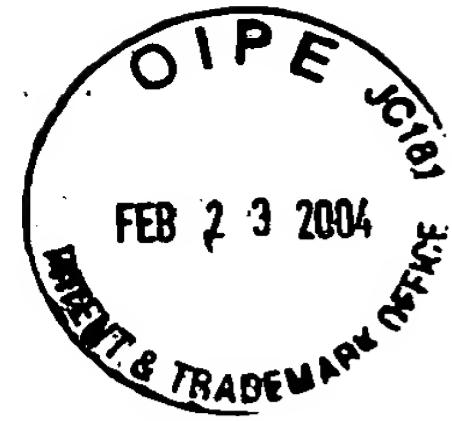


FIG. 9F



GAPSYN

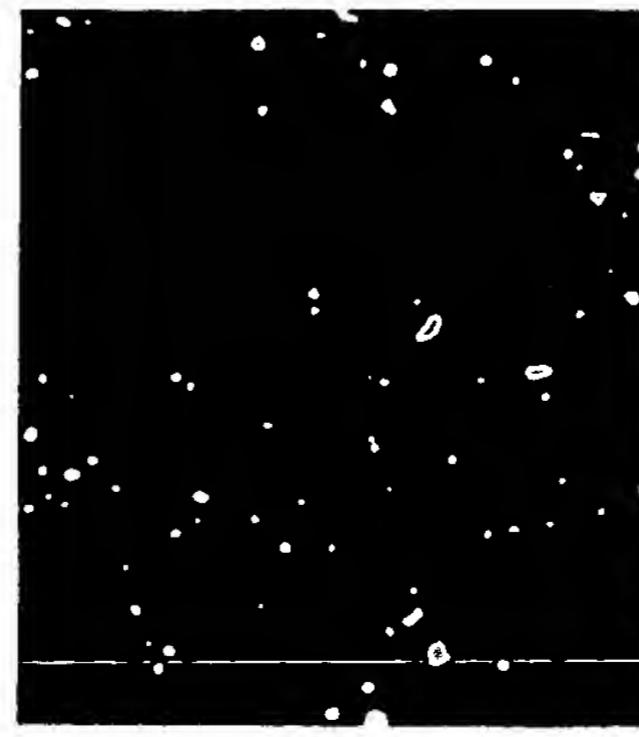


FIG. 10A

PSD-95



FIG. 10B

OVERLAP

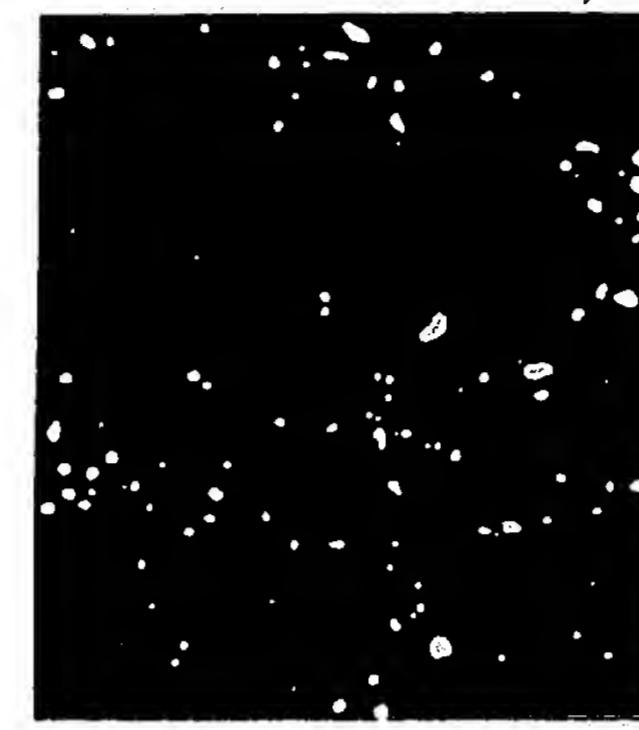


FIG. 10C



GAPSYN

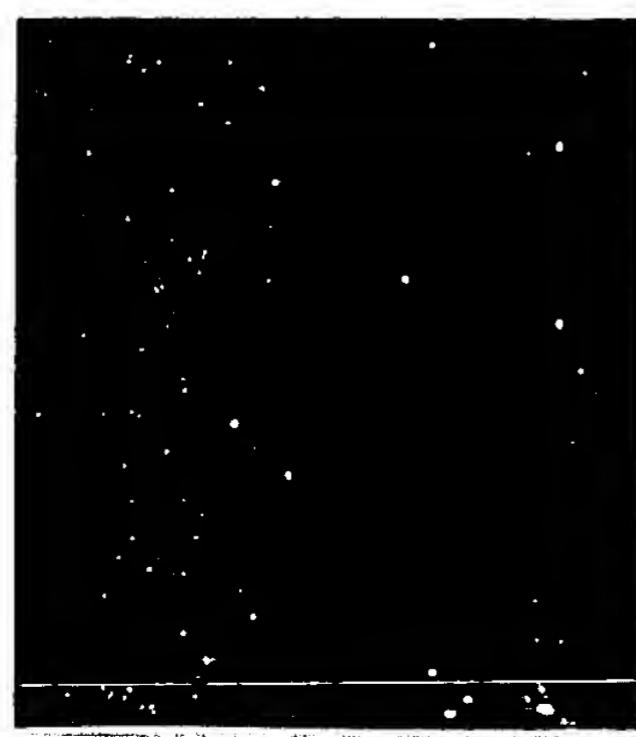


FIG. 10D

NR-1



FIG. 10E

OVERLAP

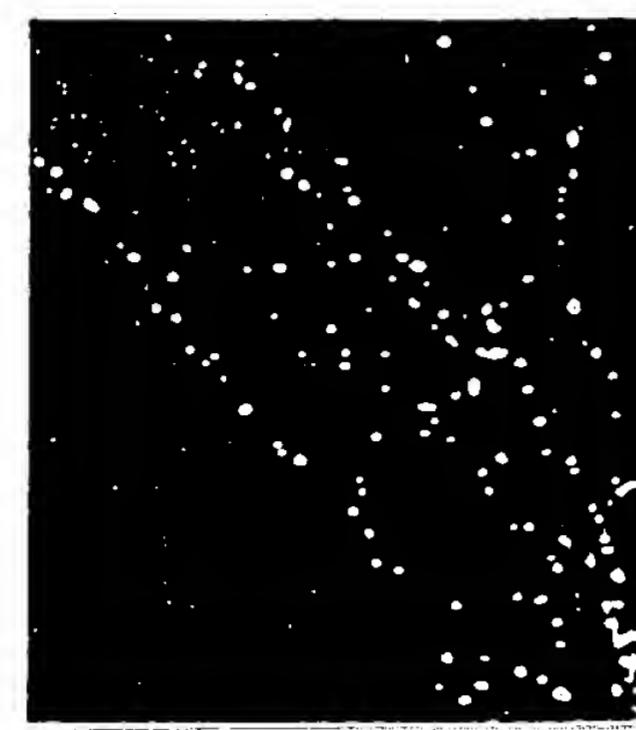


FIG. 10F

GAPSYN



FIG. 10G

GAD



FIG. 10H

OVERLAP



FIG. 10I

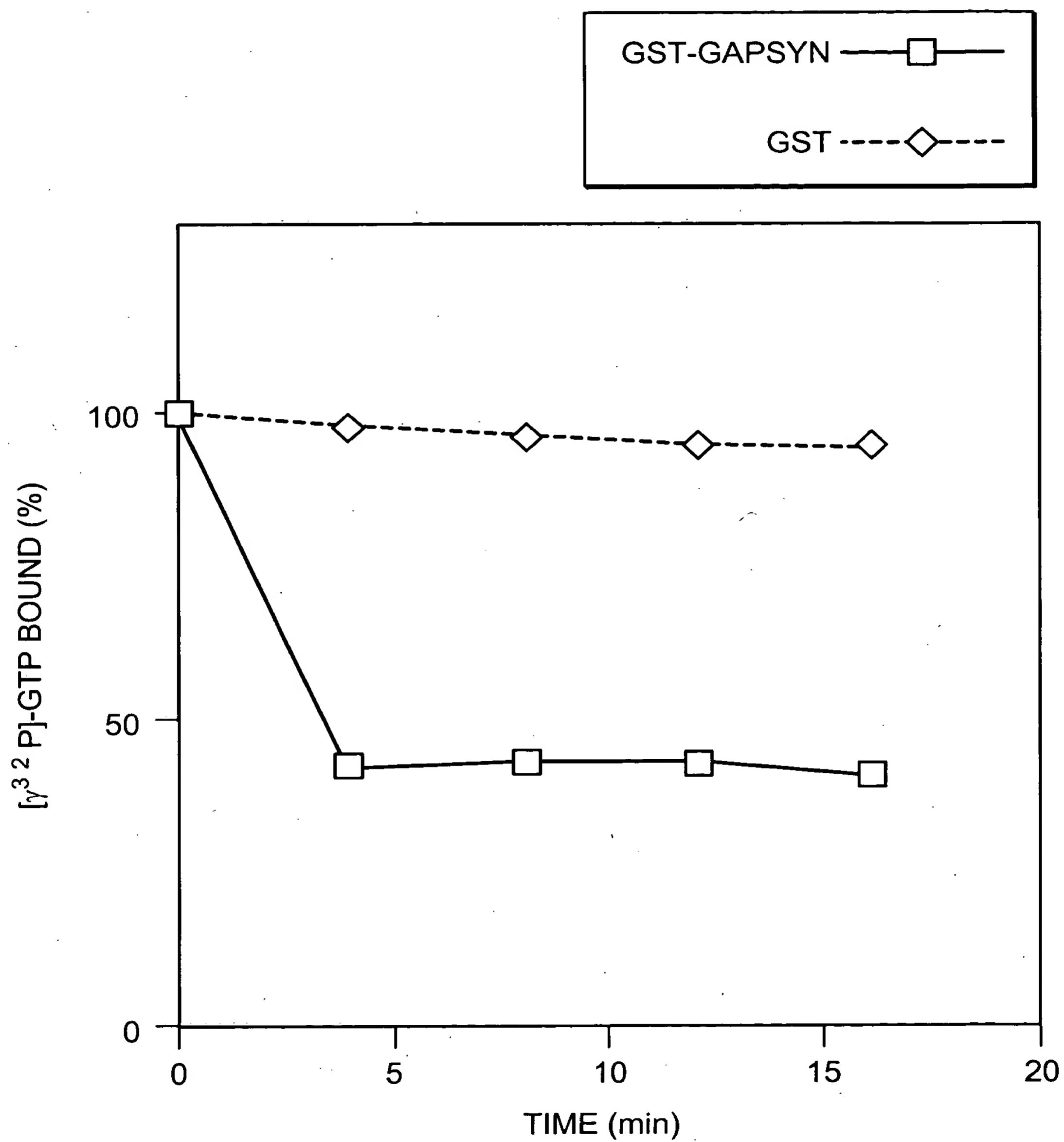


FIG. 11